Student: _____ **Date:** _____	**Instructor:** Megan Klufas **Course:** Upcoming 7th Grade Summer Packet 2020	**Assignment:** Week #1: Rates, Ratios, Proportions

1. **Mental Math** The ratio of girls to boys at a movie is $8:5$. If there are 20 boys, how many girls are at the movie?

   There are _____ girls at the movie.

2. **Challenge** A garden is 4 yards 24 inches wide and 2 yards long. Write the ratio of the width to the length as a fraction in simplest form.

   The ratio in simplest form is _____.
   (Type the ratio as a simplified fraction.)

3. A package of 3 pairs of insulated socks costs $23.67. What is the unit price of the pairs of socks?

   The unit price is $_____ per pair of socks.

4. Population density is the number of people per unit of area. The population density of a certain region is 60 people per square kilometer. If the region covers 22 square kilometers, what is the population of the region?

   The population of the region is _____ people.

5. Some people advise that in very cold weather, you should keep the gas tank in your car more than half full. Irene's car had 5.9 gallons in the 13-gallon tank on the coldest day of the year. Irene filled the tank with gas that cost $3.60 per gallon. How much did Irene spend on gas?

   She spent $_____ on gas.

6. **Challenge** An arts academy requires there to be 3 teachers for every 51 students and 4 tutors for every 44 students. How many students does the academy have per teacher? Per tutor? How many tutors does the academy need if it has 99 students?

   The academy has _____ students per teacher.

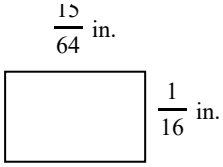
   The academy has _____ students per tutor.

   The academy needs _____ tutors.

7. You mix $3\frac{1}{2}$ quarts of juice with $5\frac{1}{4}$ quarts of ginger ale to make fruit punch. What is the ratio of the amount of juice to the amount of ginger ale in simplest form?

   The ratio in simplest form is _____.
   (Type the ratio as a simplified fraction.)

8. **Challenge** The surface of a computer chip is a rectangle with length $\frac{15}{64}$ inch and width $\frac{1}{16}$ inch. Write the ratio of the length of the rectangle to the perimeter of the rectangle as a fraction in simplest form. Write the ratio of the width to the perimeter as a fraction in simplest form.



(Figure is not to scale)

The ratio of the length to the perimeter in simplest form is _____.
(Type the ratio as a simplified fraction.)

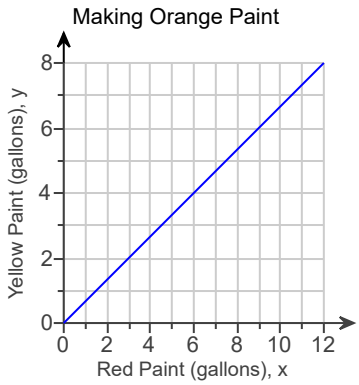
The ratio of the width to the perimeter in simplest form is _____.
(Type the ratio as a simplified fraction.)

9. A box of cereal states that there are 87 calories in a $\frac{3}{4}$-cup serving. What is the unit rate for calories per cup? How many calories are there in 2 cups of the cereal?

The unit rate is _____ calorie(s) per cup.
(Simplify your answer. Type an integer, proper fraction, or mixed number.)

There are _____ calories in 2 cups of the cereal.
(Simplify your answer. Type an integer, proper fraction, or mixed number.)

10. **Error Analysis** A company mixes custom paints. The graph shows the proportional relationship between gallons of red paint and gallons of yellow paint needed to make orange paint. To make 10 gallons of orange paint, a worker mixes 4 gallons of red paint and 6 gallons of yellow paint, but the color is incorrect. What is the correct combination? What is the likely error that the worker made?



How many gallons of red paint should the worker use to make 10 gallons of orange paint?

_____ gallons of red paint

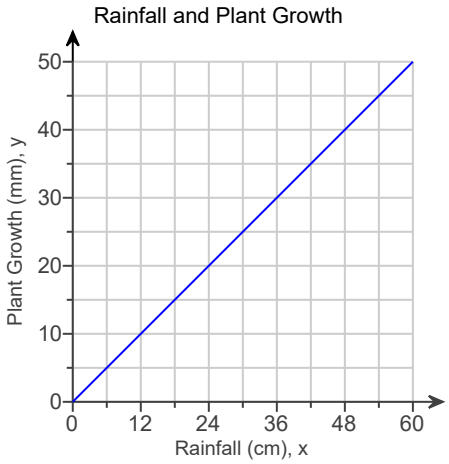
How many gallons of yellow paint should the worker use?

_____ gallons of yellow paint

What was the worker's likely error?

- **A.** The worker rounded the number of gallons of red paint incorrectly.
- **B.** The worker used the x-value from the graph for the red paint and the y-value for the yellow paint.
- **C.** The worker used the x-value from the graph for the yellow paint and the y-value for the red paint.
- **D.** The worker rounded the number of gallons of yellow paint incorrectly.

11. The graph shows the proportional relationship between rainfall during the growing season and seasonal growth of a type of plant. What does the point (18,15) represent? If the plants grew 20 mm one season, how much rain fell?



What does the point (18,15) represent?

- **A.** The plants grow 15 mm in seasons with 18 cm of rainfall.
- **B.** The plants grow 18 mm in seasons with 15 cm of rainfall.
- **C.** The plants grow between 15 mm and 18 mm each season.
- **D.** The rainfall is between 15 cm and 18 cm each season.

If the plants grew 20 mm one season, _____ cm of rain fell that season.

12. **Mental Math** Professional chefs usually measure ingredients by weight rather than by volume. A recipe calls for 2 ounces of flour for every 3 ounces of sugar. If you are a chef and you use 15 ounces of sugar, how many ounces of flour should you use? Use pencil and paper. Explain how you can use mental math to find the answer. Explain why a chef might need mental math to find an answer like this.

You should use _____ ounces of flour.

13. On a map, 1 inch equals 5 miles. Two cities are 6 inches apart on the map. What is the actual distance between the cities?

The actual distance between the cities is _____ miles.

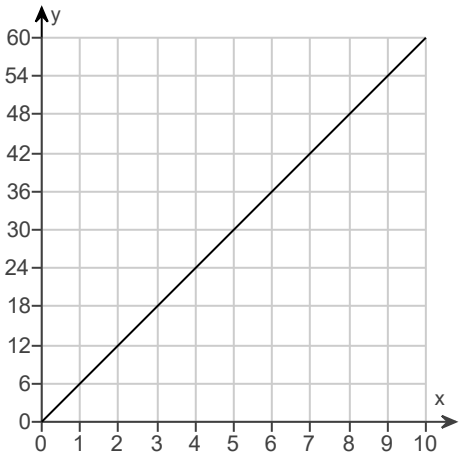
14. The distance a jet aircraft flies has a proportional relationship with its number of hours in flight. The table shows the number of miles flown for a number of hours in flight. Find the constant of proportionality. How long will the jet take to travel 4,590 miles?

Passenger Jet Travel				
Hours	2	3	4	5
Miles	1,020	1,530	2,040	2,550

The constant of proportionality is _____ miles per hour.

The jet will take _____ hours to travel 4,590 miles.

15. The variable y has a proportional relationship with x as suggested by the graph. Use the graph to find the constant of proportionality.



The constant of proportionality is _____.
(Simplify your answer.)

16. The equation below describes a proportional relationship between x and y. What is the constant of proportionality?

$$y = \frac{4}{9}x$$

The constant of proportionality is _____.

17. You bike 11.25 miles in 1.25 hours at a steady rate. What equation represents the proportional relationship between the x hours you bike and the distance y in miles that you travel?

The equation y = _____ represents the distance y in miles you bike in x hours.
(Simplify your answer.)

18. Solve the proportion.

$$\frac{14}{18} = \frac{n}{45}$$

The solution is _____.
(Type the value of n. Simplify your answer. Type an integer, proper fraction, or mixed number.)

19. **Error Analysis** Roberto incorrectly said that the solution of the proportion below is $\frac{1}{20}$. What is the correct solution? What error did Roberto likely make?

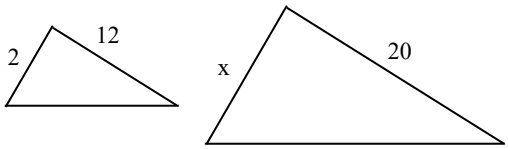
$$\frac{2}{5} = \frac{x}{8}$$

The correct solution is _____.
(Type the value of x. Simplify your answer. Type an integer, proper fraction, or mixed number.)

What error did Roberto likely make?

- **A.** He divided each side of the equation by 8.
- **B.** He multiplied the right side of the equation by 8, but divided the left side by 8.
- **C.** He multiplied each side of the equation by 8.
- **D.** He multiplied the left side of the equation by 8, but divided the right side by 8.

*20. Given that the pair of triangles are similar, find the unknown length of the side labeled with a variable.



x = _____ (Simplify your answer. Round to the nearest tenth as needed.)

1. 32

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2. $\frac{7}{3}$

---

3. 7.89

---

4. 1,320

---

5. 25.56

---

6. 17

11

9

---

7. $\frac{2}{3}$

---

8. $\frac{15}{38}$

$\frac{2}{19}$

---

9. 116

232

---

10. 6

4

C. The worker used the x-value from the graph for the yellow paint and the y-value for the red paint.

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11. A. The plants grow 15 mm in seasons with 18 cm of rainfall.

24

---

12. 10

---

13. 30

---

14. 510

    9

---

15. 6

---

16. $\frac{4}{9}$

---

17. 9x

---

18. 35

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19. $3\frac{1}{5}$

    B. He multiplied the right side of the equation by 8, but divided the left side by 8.

---

20. 3.3

Student: _____ **Date:** _____	**Instructor:** Megan Klufas **Course:** Upcoming 7th Grade Summer Packet 2020	**Assignment:** Week #2: Percents & Applications

1. The football team has a total of 20 jerseys. There are 8 medium-sized jerseys. What percent of the jerseys are medium-sized jerseys?

   _____% are medium-sized jerseys.
   (Type a whole number.)

2. A local little league has a total of 80 players, of whom 80% are left-handed. How many left-handed players are there?

   There are _____ left-handed players.
   (Type a whole number.)

3. A student answers 80% of the questions on a math exam correctly. If he answers 48 questions correctly, how many questions are on the exam?

   There are _____ questions on the exam.
   (Type a whole number.)

4. The local newspaper has letters to the editor from 40 people. If this number represents 8% of all of the newspaper's readers, how many readers does the newspaper have?

   The newspaper has _____ readers.

5. Find the sales tax.

Sales Tax		
Selling Price	Rate of Sales Tax	Sales Tax
$50.00	8%	?

   The sales tax is $_____.

6. Find the sales tax. Then find the total cost of the item.

Sales Tax		
Selling Price	Rate of Sales Tax	Sales Tax
$70.00	6%	?

   The sales tax is $_____.

   The total cost is $_____.

7. Find the commission.

Earning Commission		
Sales	Commision Rate	Commission
$700	7%	?

   The commission is $_____.

8. A salesperson works 40 hours per week at a job where she has two options for being paid. Option A is an hourly wage of $24. Option B is a commission rate of 10% on weekly sales. How much does she need to sell this week to earn the same amount with the two options?

She needs to sell $_____ this week.

9. **Writing** A car salesperson works 40 hours per week at a job where he has two options for being paid. Option A is an hourly wage of $17. Option B is a commission rate on weekly sales, and he averages $8,500 in sales each week. What commission rate does he need to have to earn the same amount with the two options? Use pencil and paper. Would you prefer a job that pays hourly or is based on commission? Explain.

He needs to have _____% commission.

10. If the simple interest on $5,000 for 3 years is $1,050, then what is the interest rate?

The rate is _____%.

11. Edward deposited $10,000 into a savings account 5 years ago. The simple interest rate is 4%. How much money did Edward earn in interest? What would be his new account balance?

He earned $_____ in interest.

His new account balance would be $_____.

12. **Challenge** In the first week of July, a record 1,060 people went to the local swimming pool. In the second week, 125 fewer people went to the pool than in the first week. In the third week, 145 more people went to the pool than in the second week. In the fourth week, 126 fewer people went to the pool than in the third week. What is the percent decrease in the number of people who went to the pool over these four weeks?

The percent decrease of people who went to the pool is _____%.

13. Jillian hoped to get 300 pumpkins from her garden this year. Since the weather was favorable, 20% more pumpkins grew than she expected. Unfortunately, animals ate 30% of all the pumpkins that grew. How many pumpkins were left? Is the final number of pumpkins more than or less than she hoped?

There were _____ pumpkins left in the garden.

The final number of pumpkins is (1) _____ than Jillian hoped.

(1) ○ more
○ less

14. **Challenge** A sporting goods store bought a ski set at a cost of $328. Later, the ski set was marked down 10% from its selling price and then marked down another 30%. The total markdown is the greatest possible markdown without the store losing money. Find the original selling price.

The original selling price of the ski set was $_____. (Round to the nearest dollar as needed.)

15. The selling price of an item is $495. After 6 months of not selling, it is marked down by 20%. After another 6 months of not selling, it is further marked down by 10%. Find the sale price after both markdowns.

The sale price after both markdowns is $_____.
(Round to the nearest dollar as needed.)

16. A $210 suit is marked down by 20%. Find the sale price.

The sale price is $_____. (Round to the nearest dollar as needed.)

17. **Think About the Process** A store that buys and sells used video games buys a game at a cost of $29 and sells it at a selling price of $36. Find the markup. Then find the percent markup.

The markup is $_____.

The percent markup is _____%. (Round to the nearest whole number as needed.)

18. A diamond ring which normally sells for $1,275 is on sale for $1,020. A ruby ring which normally sells for $200 is on sale for $100. Find the percent markdown for each ring. Compare the percent markdown for the two rings.

The percent markdown for the diamond ring is _____%.
(Round to the nearest whole number as needed.)

The percent markdown for the ruby ring is _____%.
(Round to the nearest whole number as needed.)

The percent markdown for the diamond ring is (1) _____ the percent markdown for the ruby ring.

(1) ○ equal to
○ less than
○ greater than

19. Ron wants to buy a video game with a selling price of $64, on sale for 50% off. The sales tax in his state is 1.5%. How much will Ron have to pay in all? If he has $34, can he afford to purchase the game?

Ron will have to pay $_____ in all.

Ron (1) _____ afford to purchase the video game.

(1) ○ cannot
○ can

20. **Think About the Process** You have 20 quarters. You find 40% more quarters in your room. Then you go shopping and spend 75% of the total number of quarters. Write an expression to represent the total number of quarters you take with you shopping. Calculate, in dollars, the amount of money you have left.

What expression represents your total number of quarters?

○ **A.** $20 + (20 \div 0.75)$
○ **B.** $20 + (20 \times 40)$
○ **C.** $20 + (20 \div 40)$
○ **D.** $20 + (20 \times 0.40)$

You have $_____ left.

1. 40

2. 64

3. 60

4. 500

5. 4.00

6. 4.20
   74.20

7. 49.00

8. 9,600

9. 8

10. 7

11. 2,000
    12,000

12. 10

13. 252
    (1) less

14. 521

15. 356

16. 168

17. 7

    24

---

18. 20

    50

    (1) less than

---

19. 32.48

    (1) can

---

20. D. $20 + (20 \times 0.40)$

    1.75

Student: _____ **Date:** _____	**Instructor:** Megan Klufas **Course:** Upcoming 7th Grade Summer Packet 2020	**Assignment:** Week #3: Number System & Integers

1. **Error Analysis** A student incorrectly writes the distance between -56 and -22 on the number line as $|-56-22|$. Find an expression that correctly represents the distance. What was the student's likely error?

   Which expression below represents the distance between -56 and -22 on the number line?

   - **A.** $|-22-56|$
   - **B.** $|-56+22|$
   - **C.** $|22+56|$
   - **D.** $|56+22|$

   What was the student's likely error?

   - **A.** The student added the numbers instead of subtracting.
   - **B.** The student wrote the terms in the wrong order.
   - **C.** The student did not first write the absolute value of each number.
   - **D.** The student subtracted the numbers instead of adding.

2. Suppose an airplane is flying 13,000 feet above the ground. Another airplane is directly above at 35,000 feet above the ground. How far apart are the airplanes?

   The airplanes are _____ feet apart.

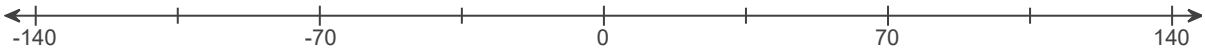
3. **Reasoning** Rachel withdraws $19 from her bank account once each day for six days. What integer represents the change in the amount in the account? Use pencil and paper. Find the integer that would represent the change in the amount in the account if Rachel deposits $19 into her bank account once each day for six days. Explain the difference between the integer for the withdrawals and the integer for the deposits.

   The integer _____ represents the change in the amount in the account after withdrawing $19 once each day for six days.

4. **Football** A football team loses 3 yards on each of 2 consecutive plays. Find the total change in yards from where the team started.

   The total change is _____ yards.

5. **Multiple Representations** Use the number line to find $-35(2)$. Then find other products with the same value.



$-35(2) =$ _____

Which of these products has the same value? Select all that apply.

- ☐ **A.** $5(-14)$
- ☐ **B.** $14(-5)$
- ☐ **C.** $10(-14)$
- ☐ **D.** $14(-10)$
- ☐ **E.** $10(-7)$
- ☐ **F.** $7(-10)$
- ☐ **G.** $2(-35)$

6. **Think About the Process** Before multiplying, determine if the product $5(-7)(-2)$ is positive or negative. Then multiply to find the product. Use pencil and paper. Explain how you can tell the sign of a product without actually multiplying.

Is the product positive or negative?

- ○ Negative
- ○ Positive

$5(-7)(-2) =$ _____

7. Hot air balloons generally descend at a rate of 200 to 400 feet per minute. Six balloons descend 280 feet per minute for 4 minutes. Find the total change in altitude for all 6 balloons.

The total change in altitude for all 6 balloons is _____ feet.

8. **Challenge** A gold mine has two elevators, one for equipment and another for the miners. The equipment elevator descends 5 feet per second. The elevator for the miners descends 15 feet per second. One day, the equipment elevator begins to descend. After 26 seconds, the elevator for the miners begins to descend. What is the position of each elevator relative to the surface after another 19 seconds? At that time, which elevator is deeper?

The position of the equipment elevator relative to the surface is _____ feet.

The position of the elevator for the miners relative to the surface is _____ feet.

The (1) _____ is deeper.

(1)
- ○ equipment elevator
- ○ elevator for the miners

9. **Writing** What is the sign of a^2b when $a = 9$ and $b = 3$? Use pencil and paper. Does the sign of the product depend on the sign of a, the sign of b, or the signs of both a and b? Explain.

When $a = 9$ and $b = 3$, the sign of a^2b is (1) _____

(1) ○ negative.
○ positive.

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10. **Business Loss** A company loses $78 as a result of a shipping delay. The 6 owners of the company must share the loss equally. Write an expression for the earnings per person. Evaluate the expression.

Write an expression for the earnings per person. Choose the correct answer below.

○ **A.** $-6 \div (-78)$
○ **B.** $-78 \div 6$
○ **C.** $6 \div (-78)$
○ **D.** $78 \div (-6)$

Evaluate the expression.

_____

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11. A team has 6 members. Their combined score in a game is 20. Four team members scored above zero. Their combined score is 24. These team members all have the same score. Two team members scored below zero. Their combined score is -4. These team members all have the same score. Find an expression for the score of a team member from each group. Evaluate the expressions.

Write an expression for the score of a team member who scored above zero. Choose the correct answer below.

○ **A.** $-4 \div 24$
○ **B.** $24 \div (-4)$
○ **C.** $24 \div (-2)$
○ **D.** $24 \div 4$

Evaluate the quotient.

_____

Write an expression for the score of a team member who scored below zero. Choose the correct answer below.

○ **A.** $-4 \div 2$
○ **B.** $-4 \div (-4)$
○ **C.** $-4 \div (-2)$
○ **D.** $-2 \div (-4)$

Evaluate the quotient.

_____

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12. Which of the following are sums of additive inverses? Use pencil and paper. Explain how you know how each sum compares to zero without doing any computing.

$-26+(-26)$ $-(-26)+(-26)$ $26+(-26)$ $-(-26)+26$

Which of the following are sums of additive inverses?

- ☐ **A.** $-(-26)+26$
- ☐ **B.** $-(-26)+(-26)$
- ☐ **C.** $26+(-26)$
- ☐ **D.** $-26+(-26)$

13. Which of these situations can be represented by the opposite of 7.5?

An elephant lost 7.5 kg.
The cost of theater tickets increased by $7.50.
Your car used 7.5 gallons of gas.
The temperature went up 7.5°C.
A giraffe gained 7.5 kg.
The water level in a lake dropped 7.5 cm.

Select each situation that can be represented by the opposite of 7.5.

- ☐ **A.** The water level in a lake dropped 7.5 cm.
- ☐ **B.** An elephant lost 7.5 kg.
- ☐ **C.** Your car used 7.5 gallons of gas.
- ☐ **D.** A giraffe gained 7.5 kg.
- ☐ **E.** The temperature went up 7.5°C.
- ☐ **F.** The cost of theater tickets increased by $7.50.

14. Order the values from least to greatest.

$|5|$ $|-32|$ $|0.63|$

Choose the correct answer below.

- ○ **A.** $|0.63|, |-32|, |5|$
- ○ **B.** $|-32|, |0.63|, |5|$
- ○ **C.** $|0.63|, |5|, |-32|$
- ○ **D.** $|5|, |0.63|, |-32|$
- ○ **E.** $|5|, |-32|, |0.63|$
- ○ **F.** $|-32|, |5|, |0.63|$

15. Which of these situations can be represented by the opposite of -6?

You walk down 6 flights of stairs.
You climb up 6 flights of stairs.
The temperature drops 6°F.
You spend $6 on a book.

Choose the correct answer below.

- **A.** You spend $6 on a book.
- **B.** You climb up 6 flights of stairs.
- **C.** You walk down 6 flights of stairs.
- **D.** The temperature drops 6°F.

16. **Submarine Depth** Two submarines are underwater. The number $-4{,}910$ represents Submarine A's position (in feet) relative to the surface. The number $-5{,}212$ represents Submarine B's position (in feet) relative to the surface. Which submarine is closer to the surface?

Choose the correct answer below.

- **A.** Submarine A is closer to the surface.
- **B.** Submarine B is closer to the surface.
- **C.** Both submarines are at an equal distance away from the surface.

17. **Challenge** In City A, the temperature rises 6°F from 8 A.M. to 9 A.M. Then the temperature drops 4°F from 9 A.M. to 10 A.M. In City B, the temperature drops 2°F from 8 A.M. to 9 A.M. Then the temperature drops 3°F from 9 A.M. to 10 A.M. Write an expression that represents the change in temperature from 8 A.M. to 10 A.M. for each city. Simplify and interpret each sum.

Use pencil and paper. Which city has the greater change in temperature?

Which expression represents the change in temperature for City A?

- **A.** $-6+4$
- **B.** $6+4$
- **C.** $-6+(-4)$
- **D.** $6+(-4)$

What is the change in temperature for City A?

For City A, the temperature (1) _____ _____°F.

Which expression represents the change in temperature for City B?

- **A.** $-2+(-3)$
- **B.** $-2+3$
- **C.** $2+(-3)$
- **D.** $2+3$

What is the change in temperature for City B?

For City B, the temperature (2) _____ _____°F.

(1) drops rises (2) rises drops

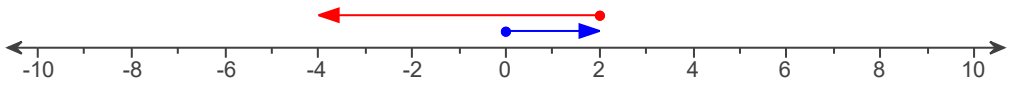
18. Which of the following are sums of additive inverses?

$5+5$ $5+(-5)$ $-3+3$ $3+(-5)$

Select all sums of additive inverses.

- **A.** $5+(-5)$
- **B.** $3+(-5)$
- **C.** $5+5$
- **D.** $-3+3$

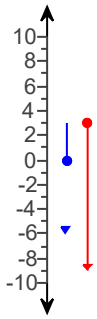
19. Write a subtraction expression for the number line model.



Which subtraction expression does the number line model show?

- **A.** $6 - 2$
- **B.** $-2 - 6$
- **C.** $-6 - 2$
- **D.** $2 - 6$

20. **Think About the Process** A man goes to a gym to lift weights. One day, when he starts his workout, he adds 3 lb to the bar. Later, for a different exercise, he removes 12 lb from the bar. The number line models the changes to the weight on the bar. Why do the arrows point in the directions they do? What is the change in the weight on the bar for the second exercise relative to the weight on the bar before the man started his workout?



Why do the arrows point in the directions they do?

- **A.** To show that the man adds weight, then removes weight from the bar.
- **B.** To show that the man removes weight, then adds weight to the bar.
- **C.** To show that the man adds weight, then adds more weight to the bar.
- **D.** To show that the man removes weight, then removes more weight from the bar.

The change is _____ lb relative to the weight on the bar when the man started his workout.

1. B. $|-56+22|$

   A. The student added the numbers instead of subtracting.

---

2. 22,000

---

3. -114

---

4. -6

---

5. -70

   A. $5(-14)$, B. $14(-5)$, E. $10(-7)$, F. $7(-10)$, G. $2(-35)$

---

6. Positive

   70

---

7. $-6{,}720$

---

8. -225

   -285

   (1) elevator for the miners

---

9. (1) positive.

---

10. B. $-78 \div 6$

    -13

---

11. D. $24 \div 4$

    6

    A. $-4 \div 2$

    -2

---

12. B. $-(-26)+(-26)$, C. $26+(-26)$

---

13. A. The water level in a lake dropped 7.5 cm., B. An elephant lost 7.5 kg., C. Your car used 7.5 gallons of gas.

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14. C. $|0.63|$, $|5|$, $|-32|$

---

15. B. You climb up 6 flights of stairs.

---

16. A. Submarine A is closer to the surface.

---

17. D. $6 + (-4)$

    (1) rises

    2

    A. $-2 + (-3)$

    (2) drops

    5

---

18. A. $5 + (-5)$, D. $-3 + 3$

---

19. D. $2 - 6$

---

20. A. To show that the man adds weight, then removes weight from the bar.

    -9

Student: _____ **Date:** _____	**Instructor:** Megan Klufas **Course:** Upcoming 7th Grade Summer Packet 2020	**Assignment:** Week #4: Stats

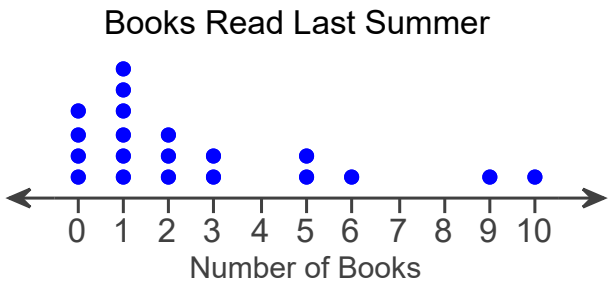
1. **Think About the Process** Your teacher asks, "At what temperature does water freeze?" To answer this question, you freeze twelve trays of water. Then you record the temperature of the water in each tray when the water starts to freeze. These data are shown in the table. What should you do to answer your teacher's question?

Temperature of Water in Each Tray ($^{\circ}$F)					
32.3	31.7	32.3	31.6	31.6	32.2
31.7	32.2	31.7	31.6	31.7	32.2

Choose the correct answer below.

- **A.** Find the difference between the highest and lowest temperatures.
- **B.** Find the temperature that occurs the most.
- **C.** Find the highest temperature.
- **D.** Find the lowest temperature.

2. A teacher asked 20 students how many books they read last summer. The dot plot displays the data.

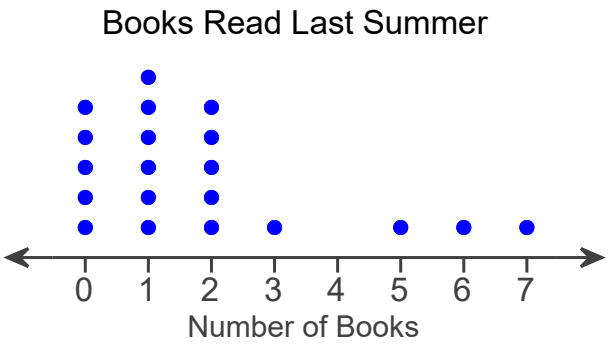


What is the greatest number of books a student read?

The greatest number is _____ books.

3. A teacher asked 20 students how many books they read last summer. The dot plot displays the data.

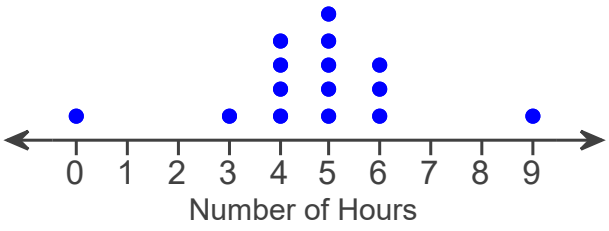
How many of these students read exactly 0 books?



Of these students, _____ read exactly 0 books last summer.

4. A doctor asked 15 people how many hours they spend exercising each week. The dot plot displays the data.

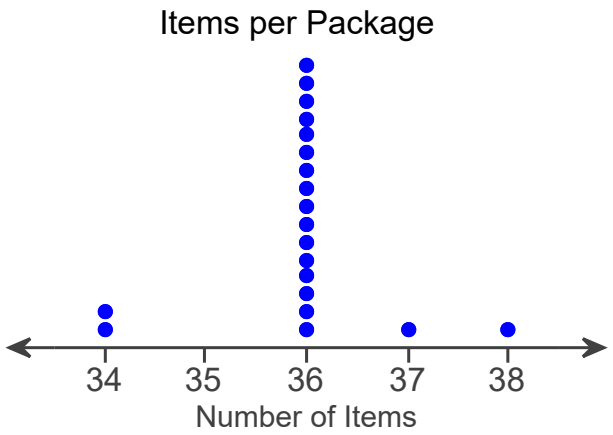
What do any clusters and gaps in the dot plot tell you about the exercise habits of these people?



Most of the people exercise (1) _____ hours per week.

(1)
- ○ fewer than 4
- ○ between 3 and 6
- ○ either fewer than 2 or more than 7
- ○ more than 5

5. **Reasoning** A machine is designed to place 36 items in each package. A manager opened 20 packages and counted the number of items in each. The dot plot displays the data.



How many of the 20 packages did not contain 36 items? How many items would you expect to find in a package? Use pencil and paper. What should the manager conclude? Explain your reasoning.

Of the 20 packages opened, _____ did not contain 36 items.

You would expect _____ items in a package.

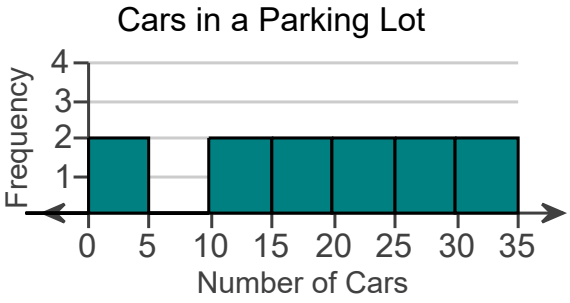
6. The table shows the number of cars in a parking lot at 6 P.M. each day for two weeks. Make a histogram of the data.

Cars in a Parking Lot

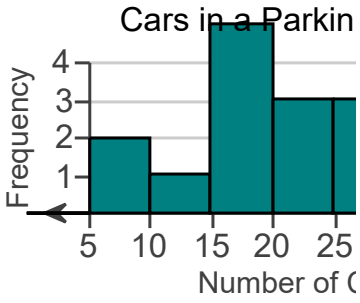
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturda
6	37	27	29	9	12	22
36	18	23	26	19	34	17

Which histogram shows the data?

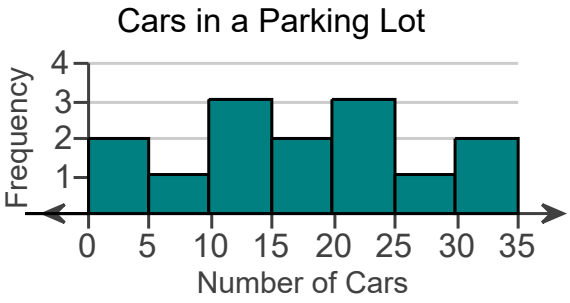
A.



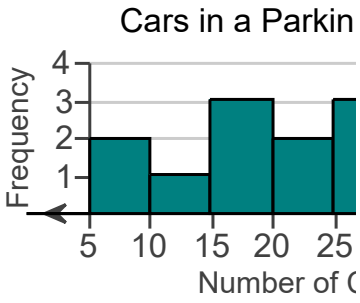
B.



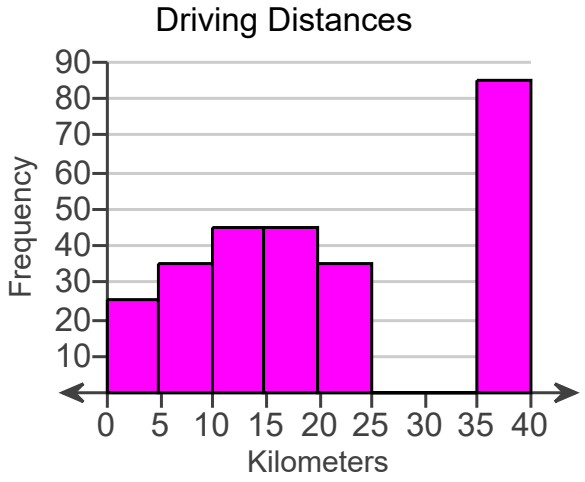
C.



D.



7. A survey asked 270 people how far they drive to work. The histogram shows the results of the survey. One bar in the histogram stands out. What might it tell you about the drives?



What does the bar that stands out tell you about the drives?

- **A.** The number of people with a short drive to work
- **B.** The number of people that do not drive to work
- **C.** The number of people with a long drive to work
- **D.** The number of people with a moderate drive to work

8. Find the five boundary values of the data set.

10, 20, 51, 22, 17, 27, 30, 47, 19, 44, 28, 35, 36, 4

The minimum is _____.

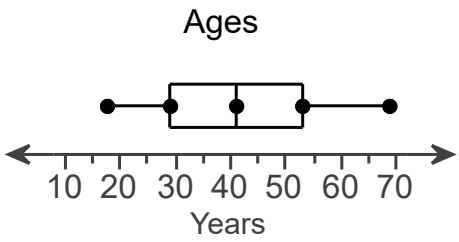
The maximum is _____.

The middle value of the data set is _____.

The middle value of the lower half is _____.

The middle value of the upper half is _____.

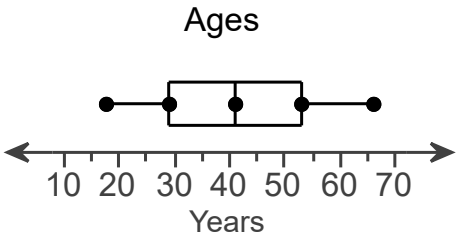
9. **Error Analysis** You and your friend record the ages of 15 people selected at random at a large family reunion. Your friend says the box plot to the right shows the distribution of ages. Show the correct box plot. What error did your friend make?



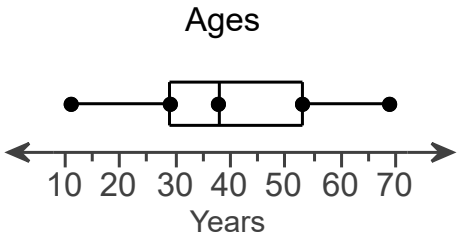
69, 53, 18, 34, 41, 29, 20, 22, 57, 31, 51, 42, 61, 38, 32

Choose the correct answer below.

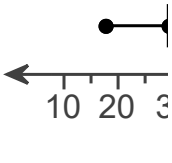
A.



B.



C.



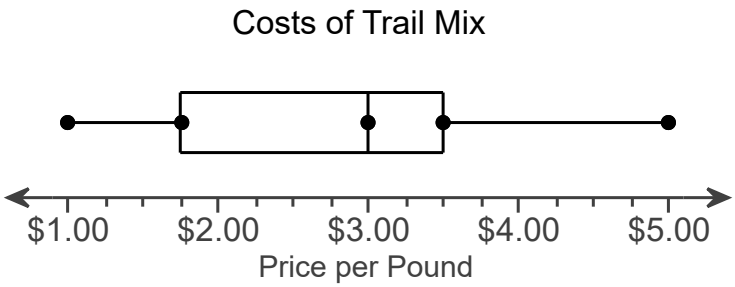
What error did your friend make?

A. Your friend used the wrong minimum value.

B. Your friend used the wrong middle value.

C. Your friend used the wrong maximum value.

10. How much does the most expensive 50% of trail mix cost? What is the most that 2 pounds of trail mix can cost? Use the box plot to answer the questions.



How much does the most expensive 50% of trail mix cost?

- **A.** Between $3.00 and $5.00 per pound
- **B.** Between $1.00 and $3.50 per pound
- **C.** Between $1.75 and $5.00 per pound
- **D.** Between $1.75 and $3.00 per pound

What is the most that 2 pounds of trail mix can cost?

- **A.** $10.00
- **B.** $2.00
- **C.** $3.00
- **D.** $6.00

11. A student received grades of 83, 84, 92, 87, and 61 on math quizzes. Find the mean.

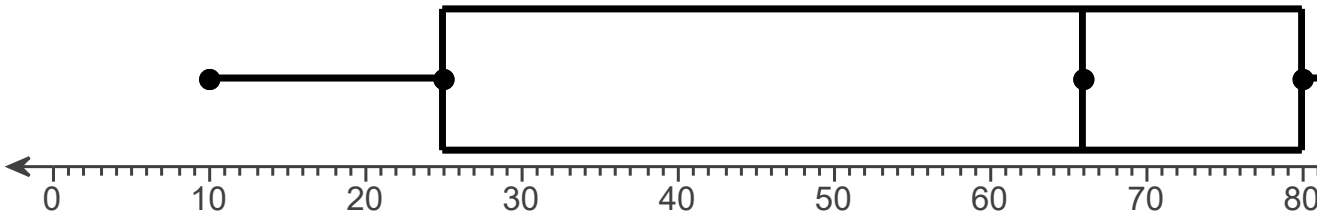
The student's mean grade was _____.
(Type an integer or a decimal.)

12. Find the value of x such that the data set has a mean of 110.

100, 120, 103, 112, 109, x

x = _____

13. Use the box plot to find the interquartile range.



The interquartile range is _____.

14. The table contains data on the admission price (in dollars) for one-day tickets to 10 theme parks in the United States. Find the interquartile range for this data set.

60	65	42	44	26	47	62	43	42	39

The interquartile range is _____.

15. **Challenge** Find the mean absolute deviation of each data set. Use pencil and paper. What do you notice about the means of the two data sets? About the mean absolute deviations of the two data sets?

Data Set 1:	47,	46,	54,	51,	57
Data Set 2:	12,	22,	51,	80,	90

The mean absolute deviation of Data Set 1 is _____.

The mean absolute deviation of Data Set 2 is _____.

1. B. Find the temperature that occurs the most.

---

2. 10

---

3. 5

---

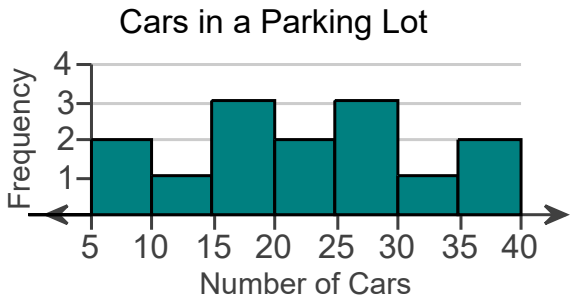
4. (1) between 3 and 6

---

5. 4

   36

6.



D.

---

7. C. The number of people with a long drive to work

---

8. 10

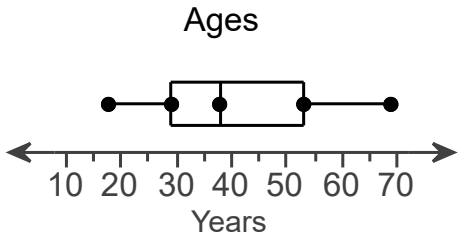
   51

   30

   20

   46

9.



C.

B. Your friend used the wrong middle value.

---

10. A. Between $3.00 and $5.00 per pound

A. $10.00

---

11. 81.4

---

12. 116

---

13. 55

---

14. 18

---

15. 3.6

27.2

Student: _____ **Date:** _____	**Instructor:** Megan Klufas **Course:** Upcoming 7th Grade Summer Packet 2020	**Assignment:** Week #5: Ops with Fractions & Decimals

1. Find the sum.

$\left(-\frac{10}{11}\right)+\frac{1}{11}$

$\left(-\frac{10}{11}\right)+\frac{1}{11}=$ _____ (Type an integer or a fraction.)

2. Find the value of the expression $6.7+(-3.5)$.

$6.7+(-3.5)=$ _____ (Type an integer or a decimal.)

3. In her garden Pam plants the seed $5\frac{1}{4}$ in. below the ground. After one month the tomato plant has grown a total of $10\frac{1}{2}$ in. How many inches is the plant above the ground?

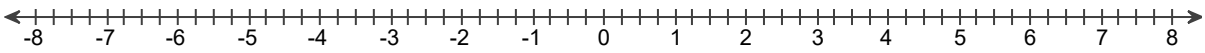
The tomato plant is _____ in. above the ground.
(Type an integer, proper fraction, or mixed number.)

4. **Mental Math** Simplify the expression $-2\frac{1}{4}+\left(-\frac{3}{4}\right)$. Use pencil and paper. Describe the steps you use to simplify this expression using mental math. Tell why this expression allows you to use mental math.

$-2\frac{1}{4}+\left(-\frac{3}{4}\right)=$ _____ (Type an integer or a fraction.)

5. Use a number line to find $2\frac{1}{2}-4\frac{3}{4}$.

Move the cursor until it lies on the point that represents the difference $2\frac{1}{2}-4\frac{3}{4}$.



$2\frac{1}{2}-4\frac{3}{4}=$ _____
(Simplify your answer. Type an integer, proper fraction, or mixed number.)

6. The temperature in a town is 29.7°F during the day and -7.3°F at night. Find the difference in the temperatures.

The difference in temperature is _____ $^{\circ}$F.

7. The freezing point of Chemical A is -164.23°C. The freezing point of Chemical B is -60.2°C. Which chemical has a higher freezing point? How much higher is it?

Select the correct choice below and fill in the answer box with the temperature difference.

- **A.** The freezing point of Chemical A is _____ $^{\circ}$ higher than Chemical B's freezing point.
- **B.** The freezing point of Chemical B is _____ $^{\circ}$ higher than Chemical A's freezing point.

8. **Challenge** Alicia brings $3\frac{1}{9}$ pounds of hamburger to cook at Juan's cookout. If Juan already bought $4\frac{3}{11}$ pounds of hamburger, how many pounds of meat do they have in total? Write each fraction as a decimal to help you find the total. If they are making hamburgers that are each $\frac{1}{3}$ pound, how many hamburgers can they make?

What is the decimal expansion for $3\frac{1}{9}$?

- **A.** $3.\overline{1}$
- **B.** 3.11
- **C.** 3.3
- **D.** $3.\overline{27}$

What is the decimal expansion for $4\frac{3}{11}$?

- **A.** 4.27
- **B.** 4.11
- **C.** $4.\overline{27}$
- **D.** $4.\overline{1}$

They have _____ pounds of hamburger.
(Round to the nearest hundredth as needed.)

They can make _____ hamburgers.
(Type a whole number.)

9. **Error Analysis** Jeremy incorrectly says that $3\frac{1}{8}$ is the same as 3.18. Convert $3\frac{1}{8}$ to a decimal correctly. Then explain Jeremy's likely error.

$3\frac{1}{8}$ = _____

What was Jeremy's likely error?

- **A.** He divided 8 by 1 instead of dividing 1 by 8.
- **B.** He wrote the decimal to two places instead of three places.
- **C.** He used the fraction digits as the decimal digits.
- **D.** He switched the digits 1 and 8 and should have written 3.81.

10. At a butcher shop, Karl bought $5\frac{1}{4}$ lb of beef and some pork. He left with $21\frac{16}{25}$ lb of meat. Express the number of pounds of pork he bought using a decimal.

Karl bought _____ lb of pork.

11. **Challenge** Order the values from greatest to least.

$|139|$ $\left|8\frac{3}{5}\right|$ $\left|-\frac{7}{8}\right|$ $|-115|$ $|18.08|$

The values in order from greatest to least are (1) _____, (2) _____, (3) _____, (4) _____, and (5) _____

(1) ○ $|-115|$ ○ $|139|$ ○ $\left|8\frac{3}{5}\right|$ ○ $|18.08|$ ○ $\left|-\frac{7}{8}\right|$

(2) ○ $\left|8\frac{3}{5}\right|$ ○ $|139|$ ○ $|-115|$ ○ $|18.08|$ ○ $\left|-\frac{7}{8}\right|$

(3) ○ $|-115|$ ○ $|139|$ ○ $\left|-\frac{7}{8}\right|$ ○ $|18.08|$ ○ $\left|8\frac{3}{5}\right|$

(4) ○ $|139|$ ○ $|18.08|$ ○ $|-115|$ ○ $\left|8\frac{3}{5}\right|$ ○ $\left|-\frac{7}{8}\right|$

(5) ○ $|-115|$. ○ $|139|$. ○ $|18.08|$. ○ $\left|8\frac{3}{5}\right|$. ○ $\left|-\frac{7}{8}\right|$.

12. Find the product.

$-\frac{1}{2} \cdot \frac{1}{7}$

$-\frac{1}{2} \cdot \frac{1}{7} =$ _____ (Type an integer or a simplified fraction.)

13. Multiply.

$-1\frac{1}{2} \cdot -3\frac{3}{4}$

$-1\frac{1}{2} \cdot -3\frac{3}{4} =$ _____ (Type an integer, proper fraction, or mixed number.)

14. **Temperature** Suppose there is a 1.4°F drop in temperature for every thousand feet that an airplane climbs into the sky. If the temperature on the ground is 53.5°F, what will be the temperature when the plane reaches an altitude of 6,000 ft?

The temperature will be _____ °F. (Type an integer or a decimal.)

15. Find the reciprocal of $\frac{3}{5}$.

The reciprocal of $\frac{3}{5}$ is _____.
(Type an integer or a simplified fraction.)

16. **Error Analysis** Your friend says that the quotient $\frac{3}{7} \div \frac{3}{14}$ is $\frac{1}{2}$. What is the correct quotient? What mistake did your friend likely make?

What is the correct quotient?

$\frac{3}{7} \div \frac{3}{14} =$ _____ (Type an integer or a simplified fraction.)

What mistake did your friend likely make?

- **A.** Your friend multiplied with the reciprocal of the first fraction, not the second fraction.
- **B.** Your friend multiplied $\frac{7}{3} \times \frac{14}{3}$.
- **C.** Your friend added the fractions instead of dividing.
- **D.** Your friend multiplied $\frac{3}{7} \times \frac{3}{14}$.

17. **Gardening** A certain plant grows $1\frac{1}{6}$ inches every week. How long will it take the plant to grow $5\frac{1}{6}$ inches?

How long will it take the plant to grow $5\frac{1}{6}$ inches?

- **A.** 5 weeks, 4 days
- **B.** 4 weeks, 3 days
- **C.** 3 weeks, 4 days
- **D.** 4 weeks, 2 days

18. Find the quotient.

$\frac{3}{25} \div 3.4$

$\frac{3}{25} \div 3.4 =$ _____ (Type an integer or a simplified fraction.)

19. Apply the Distributive Property to simplify the expression.

$-4(-3.5-7)$

Use the Distributive Property to rewrite the expression. Which expression is correct?

- **A.** $-4(-3.5)-4(7)$
- **B.** $-4(-3.5)-(-4)(7)$
- **C.** $-4(-3.5)-7$

Evaluate the expression.

$-4(-3.5-7) =$ _____

20. **Reasoning** Apply the Distributive Property to simplify and evaluate these expressions. Use pencil and paper. Copy expressions A and B. Circle the parts in the two expressions that are different. How do the expressions inside your circles compare? Explain your reasoning.

A. $-9\left(-2\frac{2}{3}-5\right)$ B. $-9\left(\left(-2-\frac{2}{3}\right)-5\right)$

Use the Distributive Property to rewrite expression A. Which expression is correct?

- **A.** $-9\left(-2\frac{2}{3}\right)-(-9)(5)$
- **B.** $-9\left(-2\frac{2}{3}\right)-9(5)$
- **C.** $-9\left(-2\frac{2}{3}\right)-5$

Evaluate expression A.

$-9\left(-2\frac{2}{3}-5\right)=$ _____

Use the Distributive Property to rewrite expression B. Which expression is correct?

- **A.** $-9(-2)-(-9)\left(-\frac{2}{3}\right)-(-9)(-5)$
- **B.** $-9(-2)+(-9)\left(\frac{2}{3}\right)-(-9)(5)$
- **C.** $-9(-2)-(-9)\left(\frac{2}{3}\right)-(-9)(5)$

Evaluate expression B.

$-9\left(\left(-2-\frac{2}{3}\right)-5\right)=$ _____

1. $-\frac{9}{11}$

---

2. 3.2

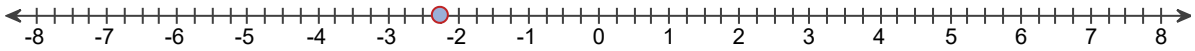
---

3. $5\frac{1}{4}$

---

4. -3

5.



$-2\frac{1}{4}$

---

6. 37.0

---

7. B. The freezing point of Chemical B is **104.03** ° higher than Chemical A's freezing point.

---

8. A. $3.\overline{1}$

C. $4.\overline{27}$

7.38

22

---

9. 3.125

C. He used the fraction digits as the decimal digits.

---

10. 16.39

---

11. (1) $|139|$

(2) $|-115|$

(3) $|18.08|$

(4) $\left|8\frac{3}{5}\right|$

(5) $\left|-\frac{7}{8}\right|$.

---

12. $-\frac{1}{14}$

---

13. $5\frac{5}{8}$

---

14. 45.1

---

15. $\frac{5}{3}$

---

16. 2

A. Your friend multiplied with the reciprocal of the first fraction, not the second fraction.

---

17. B. 4 weeks, 3 days

---

18. $\frac{3}{85}$

---

19. B. $-4(-3.5)-(-4)(7)$

42

---

20. A. $-9\left(-2\frac{2}{3}\right)-(-9)(5)$

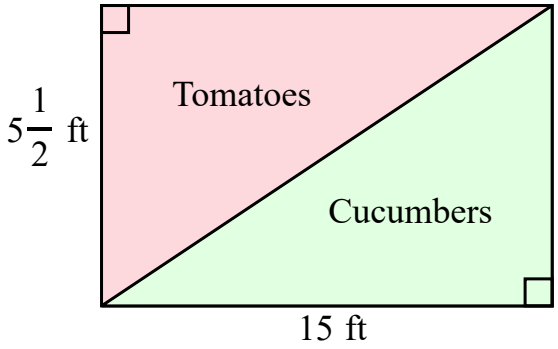
69

C. $-9(-2)-(-9)\left(\frac{2}{3}\right)-(-9)(5)$

69

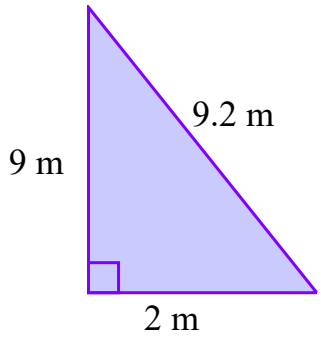
Student: _____ **Date:** _____	**Instructor:** Megan Klufas **Course:** Upcoming 7th Grade Summer Packet 2020	**Assignment:** Week #6: Geometry-SA, V, Circles, Triangles

1. Roger and Joanne are planting a rectangular garden. The garden is $5\frac{1}{2}$ ft by 15 ft. They want to use half of the garden for cucumbers and half of the garden for tomatoes. They decide to separate the garden into two right triangles as shown. What is the area of the tomato part of the garden?



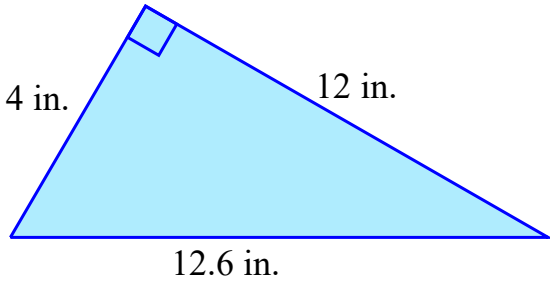
The area of the tomato part of the garden is _____ ft^2.

2. Find the area of the right triangle.



The area of the right triangle is _____ m^2.
(Round to the nearest tenth as needed.)

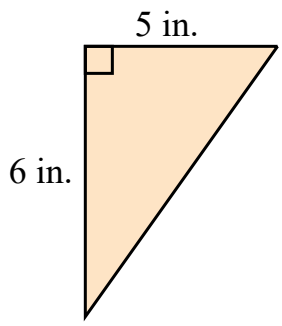
3. Find the area of the right triangle.



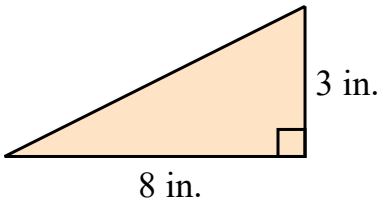
The area of the right triangle is _____ $in.^2$.
(Round to the nearest tenth as needed.)

4. Alison and Tyrone each bought a slice of pizza in the shape of a right triangle as shown. What is the area of each slice of pizza? Who has the larger slice?

Alison



Tyrone



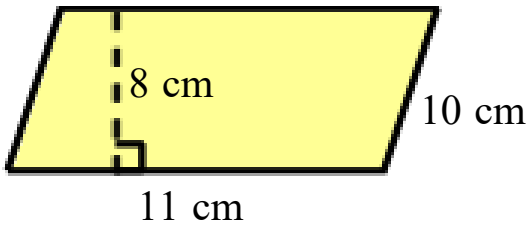
Alison's slice of pizza has an area of _____ $in.^2$.

Tyrone's slice of pizza has an area of _____ $in.^2$.

Who has the larger slice of pizza?

- ○ Alison
- ○ Tyrone
- ○ Both slices are the same size.

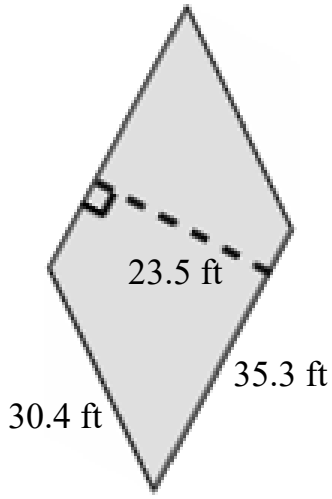
5. **Error Analysis** Two students must find the area of this parallelogram. (The diagram is not to scale.) Ari says the area is 88 cm^2. Annie says the area is 110 cm^2. One of them is correct. Who is incorrect? Explain that student's error.



Who is incorrect and why?

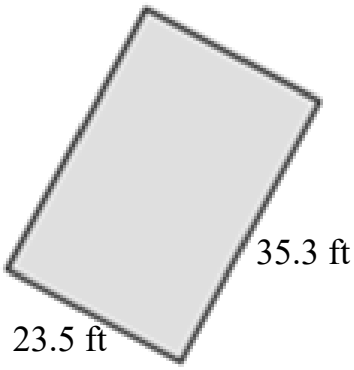
- **A.** Annie is incorrect. She used two sides instead of a base and the corresp
- **B.** Annie is incorrect. She added a base and the corresponding height instea
- **C.** Ari is incorrect. He added a base and the corresponding height instead of
- **D.** Annie is incorrect. She used the wrong side for the base.
- **E.** Ari is incorrect. He used the wrong side for the base.
- **F.** Ari is incorrect. He used two sides instead of a base and the correspondi

6. Decompose the parallelogram into a rectangle. Use the rectangle to find the area of the parallelogram.

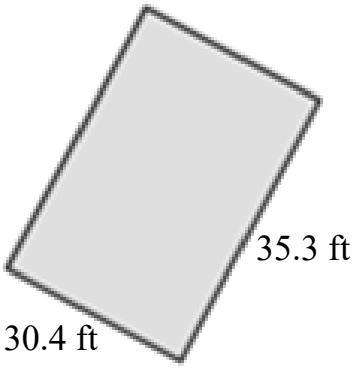


Decompose the parallelogram into a rectangle. Choose the correct rectangle below.

A.



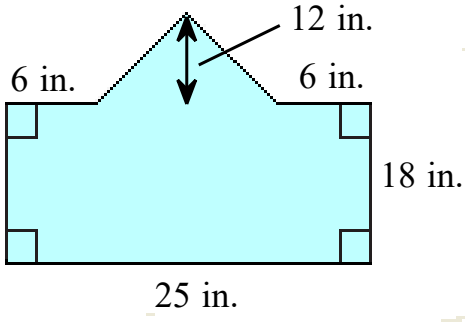
B.



C.

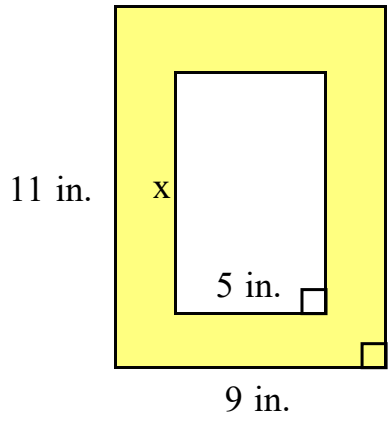
The area of the parallelogram is _____ ft^2.

7. The outside wall of a dollhouse has the shape of this polygon. What is the area of the polygon?



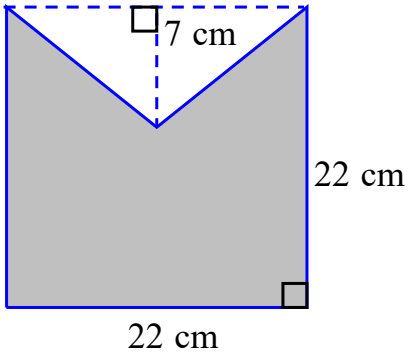
The area of the polygon is _____ $in.^2$.

8. Wesley colors a border around a drawing. The height of the drawing is 2 in. greater than the 5-in. base. What is the area of the border?



The area of the border is _____ $in.^2$.

9. A teacher tells his students to find the area of the shaded region. The class is to use the area of a triangle and the area of a square. A student incorrectly states that the area is 561 cm^2. What is the correct area of the shaded region? What is the student's error?



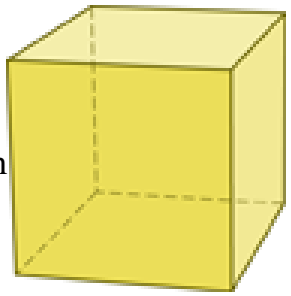
What is the correct area of the shaded region?

The area of the shaded region is _____ cm^2.

What is the student's error?

- **A.** The student added the area of the triangle and the area of the square.
- **B.** The student multiplied the area of the triangle and the area of the square.
- **C.** The student subtracted the area of the square from the area of the triangl
- **D.** The student subtracted the area of the triangle from the area of the squar

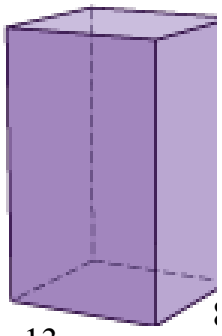
10. Use a net to find the surface area of the cube.



(The figure is not to scale.)

The surface area is _____ cm^2.

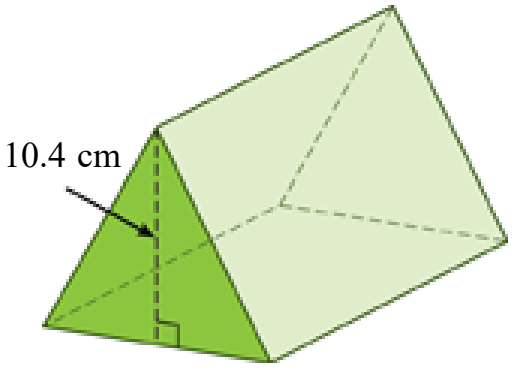
11. Use a net to find the surface area of the rectangular prism.



(The figure is not to scale.)

The surface area is _____ cm^2.

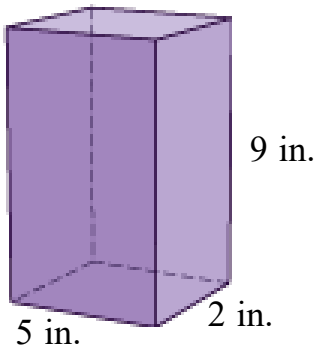
12. The triangular faces of the prism shown are equilateral triangles with perimeter 36 cm. Each of the other faces is a square. Use a net to find the surface area of the prism.



(The figure is not to scale.)

The surface area of the triangular prism is _____ cm^2.

13. You are giving this box filled with fruit snacks to your friend as a gift. Find the volume of the box to find the amount of fruit snacks you can fit inside. Find the surface area of the box to find how much decorative wrap you need.

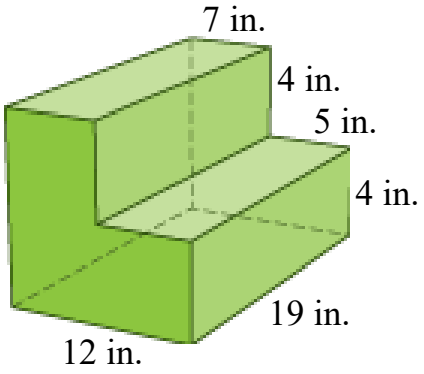


(The figure is not to scale.)

The volume is _____ $in.^3$.

The surface area is _____ $in.^2$.

14. You plan to build a step stool with two steps as shown. How many square inches of wood do you need to build this step stool?



(The figure is not to scale.)

To build this step stool you need _____ square inches of wood.

15. **Think About the Process** A right rectangular prism has length $3\frac{1}{3}$ yd, width $2\frac{1}{3}$ yd, and height $1\frac{1}{3}$ yd. You use cubes with fractional edge length $\frac{1}{3}$ yd to find the volume. How many cubes are there for each of the length, width, and height of the prism? Find the volume.

How many cubes are there for each of the length, width, and height of the prism?

The length has _____ cubes, the width has _____ cubes, and the height has _____ cubes.

The volume of the right rectangular prism is _____ yd^3.

16. A circular plate has circumference 24.5 inches. What is the area of this plate? Use 3.14 for π.

The area of this plate is about _____ square inches.
(Round the final answer to the nearest whole number as needed. Round all intermediate values to the nearest thousandth as needed.)

17. **Error Analysis** The circumference of a circle is 83.08 cm. A student was asked to approximate the area of the circle. She incorrectly said the area of the circle is about 1,100 cm^2. What is the approximate area of the circle? Use 3.14 for π. What mistake might the student have made?

The area of the circle is about _____ cm^2.
(Round the final answer to the nearest whole number as needed. Round all intermediate values to the nearest thousandth as needed.)

What mistake might the student have made?

- **A.** She used the formula $A = 2\pi r^2$.
- **B.** She found the diameter of the circle. ^{2}
- **C.** She used the diameter of the circle to calculate the area. ^{2}
- **D.** She found the radius of the circle. ^{2}

18. Why is it not possible to draw a figure with the given conditions?

A triangle with two 95° angles

Choose the correct answer below.

- **A.** It is not possible because the rays forming the angles will never meet.
- **B.** It is not possible because the sum of the angles is less than 180°.
- **C.** It is not possible because the sum of the angles is 180°.
- **D.** It is not possible because a triangle must have a right angle.

19. A farmer is putting up a fence for his animals. He originally had the fence enclosing a square area. The square was 17 ft by 17 ft. Suppose he uses the same amount of fencing to enclose a circular area. What is the area of the circle? Use 3.14 for π.

The area of the circle is _____ ft^2.
(Round to the nearest whole number as needed.)

20. A circular flower bed is 22 m in diameter and has a circular sidewalk around it that is 4 m wide. Find the area of the sidewalk in square meters. Use 3.14 for π.

The area of the sidewalk is _____ m^2.
(Round to the nearest whole number as needed.)

1. $41\frac{1}{4}$

---

2. 9.0

---

3. 24.0

---

4. 15

   12

   Alison

---

5. A.
   Annie is incorrect. She used two sides instead of a base and the corresponding height.

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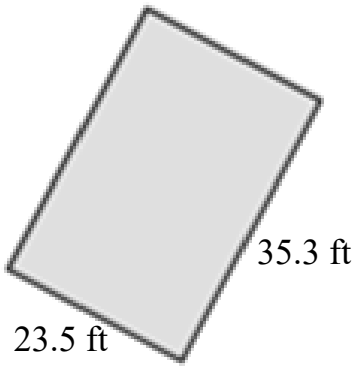
6. 

   A.

   829.55

---

7. 528

---

8. 64

---

9. 407

A. The student added the area of the triangle and the area of the square.

---

10. 37.5

---

11. 1,468

---

12. 556.8

---

13. 90

146

---

14. 912

---

15. 10

7

4

$10\frac{10}{27}$

---

16. 48

---

17. 550

    A. She used the formula $A = 2\pi r^2$.

---

18. A. It is not possible because the rays forming the angles will never meet.

---

19. 368

---

20. 327

Student: _____
Date: _____

Instructor: Megan Klufas
Course: Upcoming 7th Grade Summer Packet 2020
Assignment: Week #7: Equations

1. **Challenge** Which situation can you model with the equation 67.28 + 45.72 − x − 51 = 23? Solve the equation for x. Use pencil and paper. What does the value of x represent in the problem? Does your solution make sense in the context of the problem? Explain.

   Three friends combine their money to purchase two items.
   Five friends decide if they have enough money to buy train tickets.
   Two friends combine their money to purchase two items with some money left over.
   Three friends compare their scores on a test.

   Which situation can you model with the given equation?

   - ○ **A.** Three friends compare their scores on a test.
   - ○ **B.** Three friends combine their money to purchase two items.
   - ○ **C.** Five friends decide if they have enough money to buy train tickets.
   - ○ **D.** Two friends combine their money to purchase two items with some money left over.

   Solve the equation for x.

   x = _____

2. **Challenge** Write an addition equation to model the following problem. Then solve the equation.

   In 9 months, a shopkeeper spends $16,695 for rent, electricity, and water. Each month, she spends $1,600 for rent and $220 for electricity. How much does she spend for water each month?

   Let w be the amount in dollars the shopkeeper spends on water each month. What is an addition equation that models the problem?

   - ○ **A.** 9(220 + w) = 1,600
   - ○ **B.** 16,695 + 9w = 1,820
   - ○ **C.** 9(1,820 + w) = 16,695
   - ○ **D.** 9(1,600 + w) = 16,695

   The shopkeeper spends $ _____ for water each month.

3. Find L if A = LW, A = 27 m^2, and W = 9 m.

   L = _____ m

4. Which situation could the equation $x + 18 = 43$ model? Solve the equation for x and interpret your answer in the context of the problem.

David has 18 dollars, 43 dollars less than Rich.
Michelle has 43 dollars, 18 more dollars than Susan.
Susan has 43 dollars, 18 times as many as David.

Which situation could the equation $x + 18 = 43$ model?

- **A.** Michelle has 43 dollars, 18 more dollars than Susan.
- **B.** Susan has 43 dollars, 18 times as many as David.
- **C.** David has 18 dollars, 43 dollars less than Rich.

Solve for x and interpret your answer in the context of the correct situation. Select the correct choice below and fill in the answer box to complete your choice.

- **A.** Rich has _____ dollars.
- **B.** Susan has _____ dollars.
- **C.** David has _____ dollars.

5. **Reasoning** Write an addition equation to model the following problem. Then solve the equation. Use pencil and paper. Why would you use addition, instead of another operation, to model this situation?

A traffic helicopter ascends 164 meters more than two times its original height. This is 1,044 meters above the ground. What was the original height h of the helicopter?

Write an addition equation that models the problem. Choose the correct answer below.

- **A.** $2(h + 164) = 1{,}044$
- **B.** $2h + 1{,}044 = 164$
- **C.** $2(h + 1{,}044) = 164$
- **D.** $164 + 2h = 1{,}044$

What was the original height of the helicopter?

h = _____ meters

6. How long will it take Michelle to drive 315 miles if she averages 70 miles per hour on the trip? Use the distance formula $d = rt$ where d represents distance, r represents rate, and t represents time to find your answer.

It would take _____ hours for Michelle to drive 315 miles.
(Type an integer or a decimal.)

7. The formula $A = LW$ represents the area of a rectangle. Solve the equation $\frac{4}{3}W = \frac{4}{6}$ for W to find the width of the rectangle in inches. Use pencil and paper. Describe a situation when you could use this equation. What does the value of W represent in your problem?

W = _____ inch(es)
(Type an integer or a simplified fraction.)

8. Which question can you answer with the equation $4\frac{1}{2} = d \div 16$? Solve for d and interpret your solution.

How many miles will an object travel in $4\frac{1}{2}$ hours if its speed is 16 miles per hour?

How many miles will an object travel in $4\frac{1}{2}$ hours if it has already gone 16 miles?

How long will it take an object to travel $4\frac{1}{2}$ miles if its speed is 16 miles per hour?

Which question can you answer with the equation $4\frac{1}{2} = d \div 16$?

- **A.** How many miles will an object travel in $4\frac{1}{2}$ hours if its speed is 16 miles per hour?
- **B.** How many miles will an object travel in $4\frac{1}{2}$ hours if it has already gone 16 miles?
- **C.** How long will it take an object to travel $4\frac{1}{2}$ miles if its speed is 16 miles per hour?

Solve for d and interpret your solution. Select the correct choice below and fill in the answer box to complete your choice.

- **A.** The object will travel _____ miles in $4\frac{1}{2}$ hours if its speed is 16 miles per hour.
- **B.** The object will travel _____ miles in $4\frac{1}{2}$ hours if it has already gone 16 miles.
- **C.** It will take _____ hours to travel $4\frac{1}{2}$ miles.

---

9. Write an equation to model the following problem. Then solve the equation.

A group of 5 friends each have x action figures in their collections. Each friend buys 12 more action figures. Now the 5 friends have a total of 170 action figures. How many action figures did each friend start with?

Which equation models the problem?

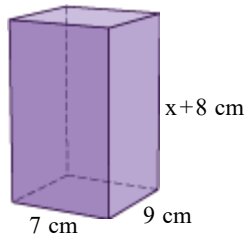
- **A.** $5(x + 12) = 170$
- **B.** $x + 60 = 170$
- **C.** $5x + 12 = 170$
- **D.** $12(x + 5) = 170$

How many action figures did each friend start with?

_____ action figures

---

10. **Think About the Process** The volume of the prism shown is 882 cm^3. Write an equation for the volume V of the prism. Then solve for x. What is the height of the prism?



Write an equation for the volume V of the prism. Choose the correct answer below.

- **A.** V = (7)(9)(x − 8)
- **B.** V = (7)(9)(x + 8)
- **C.** V = 7 + 9 + x + 8
- **D.** V = (7)(7)(x + 8)

x = _____

The height of the prism is _____ cm.

11. Solve the equation without using the Distributive Property.

7(x − 2) = 21

Undo the multiplication and simplify.

7(x − 2) = 21

x − 2 = _____

The solution is _____. (Type the value of x.)

12. Which operation do you need to solve $\frac{x}{3} = 4$?

Choose the correct answer below.

- Multiplication
- Addition
- Subtraction
- Division

13. Which operations do you need to solve 7x − 8 = 13?

You need to use (1) _____ and then (2) _____ to solve 7x − 8 = 13.

(1)
- subtraction
- division
- addition
- multiplication

(2)
- addition
- multiplication
- subtraction
- division

14. A family buys 6 airline tickets online. The family buys travel insurance that costs $16 per ticket. The total cost is $1,044. Let x represent the price of one ticket. Write an equation for the total cost. Then find the price of one ticket.

Which equation represents this situation?

- **A.** $16 = 6x + 1{,}044$
- **B.** $1{,}044 = 16(x + 6)$
- **C.** $1{,}044 = 6(x + 16)$
- **D.** $1{,}044 = 6x + 16$

The price of one ticket is $\$$ _____.

15. Last season, a sports fan spent $1,650 to see his favorite team play 33 games. To see each game, the fan had to buy a ticket and pay $20 for parking. Let p represent the amount the fan paid for each ticket. Write an equation that represents the total amount the fan paid. A friend of the sports fan bought 10 tickets at the same price. How much did the friend spend?

Which equation represents the total amount the fan paid?

- **A.** $1{,}650 = 20(p + 33)$
- **B.** $1{,}650 = 33p + 20$
- **C.** $1{,}650 = 20p + 33$
- **D.** $1{,}650 = 33(p + 20)$

The friend spent $\$$ _____.

16. **Writing** Which operation do you need to solve $\frac{x}{4.3} = 3$? Use pencil and paper. Describe how you know which operation to use to solve any equation with one operation for the four basic operations.

Which operation do you need to solve the equation?

- Division
- Multiplication
- Subtraction
- Addition

17. **Error Analysis** The solution shown for the equation is incorrect. What is the correct solution? What is the error?

$$\begin{aligned} -8(3 - r) &= 16 \\ -24 - 8r &= 16 \\ -8r &= 40 \\ r &= -5 \end{aligned}$$

The solution is _____. (Type the value of r.)

What is the error?

- **A.** The left side of the equation should be $-24 + 8r$ after distributing.
- **B.** The left side of the equation should be $-r$ after dividing each side by -8.
- **C.** The right side of the equation should be -8 after subtracting -24 from each side.
- **D.** The right side of the equation should be 5 after dividing each side by -8.

18. **Sales** Geet sells televisions. He earns a fixed amount for each television and an additional $15 if the buyer gets an extended warranty. If Geet sells 17 televisions with extended warranties, he earns $1,190. How much is the fixed amount Geet earns for each television?

The fixed amount Geet earns for each television he sells is $_____.

*19. A town has accumulated 5 inches of snow, and the snow depth is increasing by 6 inches every hour. A nearby town has accumulated 10 inches, and the depth is increasing by 3 inches every hour. In about how many hours will the snowfall of the towns be equal?

In about _____ hours, the snowfall in both towns will be equal.
(Round your answer to the nearest tenth.)

*20. Find the value of x when $6 - 3x = 5x - 10x + 16$.

The value of x is _____.

1. D. Two friends combine their money to purchase two items with some money left over.

   39

---

2. C. $9(1{,}820 + w) = 16{,}695$

   35

---

3. 3

---

4. A. Michelle has 43 dollars, 18 more dollars than Susan.

   B. Susan has **25** dollars.

---

5. D. $164 + 2h = 1{,}044$

   440

---

6. 4.5

---

7. $\frac{1}{2}$

---

8. A. How many miles will an object travel in $4\frac{1}{2}$ hours if its speed is 16 miles per hour?

   A. The object will travel **72** miles in $4\frac{1}{2}$ hours if its speed is 16 miles per hour.

---

9. A. $5(x + 12) = 170$

   22

---

10. B. $V = (7)(9)(x + 8)$

    6

    14

---

11. 3

    5

---

12. Multiplication

---

13. (1) addition

    (2) division

---

14. C. $1,044 = 6(x + 16)$

    158

---

15. D. $1,650 = 33(p + 20)$

    300

---

16. Multiplication

---

17. 5

    A. The left side of the equation should be $-24 + 8r$ after distributing.

---

18. 55

---

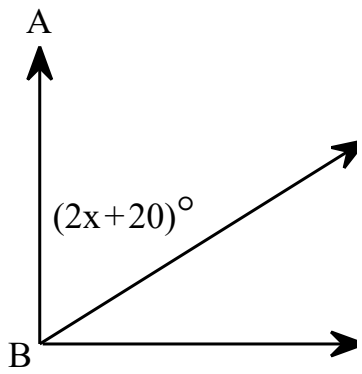
19. 1.7

---

20. 5

Student: _____	**Instructor:** Megan Klufas	
Date: _____	**Course:** Upcoming 7th Grade Summer Packet 2020	**Assignment:** Week #8: Angles

1. **Error Analysis** The measure of $\angle ABC$ is 48°. Taniy incorrectly says that $x = 35$. What is the value of x? What mistake did Taniy make?



(The figure is not sho to scale.)

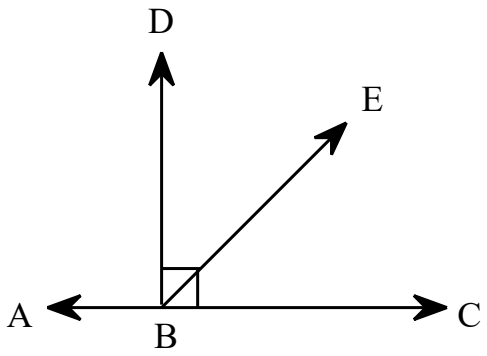
Find the value of x.

x = _____

What mistake did Taniy make? Choose the correct answer below.

- **A.** Taniy set the given expression equal to 180.
- **B.** Taniy multiplied each side of the equation by 2.
- **C.** Taniy added 20 to each side of the equation.
- **D.** Taniy set the given expression equal to 90.

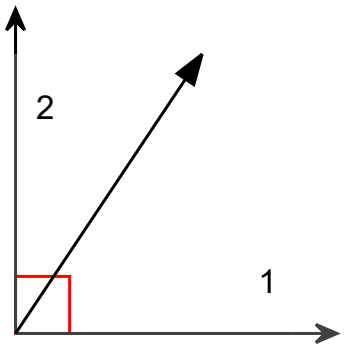
2. **Challenge** The measure of $\angle DBE$ is $(0.2x - 23)^\circ$ and the measure of $\angle CBE$ is $(0.3x - 46)^\circ$. Find the value of x.



(The figure is not shown to scale.)

x = _____

3. **Think About the Process** $\angle 1$ and $\angle 2$ are complementary angles. The measure of $\angle 1$ is 56°. The measure of $\angle 2$ is $(4x + 14)^\circ$. What should you do first to find the value of x? Find the value of x. The figure is not drawn to scale.

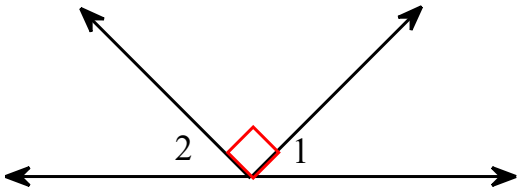


What should you do first to find the value of x?

- **A.** Write an equation where the difference of the measures of $\angle 1$ and $\angle 2$ is
- **B.** Write an equation where the sum of the measures of $\angle 1$ and $\angle 2$ is equa
- **C.** Write an equation where the difference of the measures of $\angle 1$ and $\angle 2$ is
- **D.** Write an equation where the sum of the measures of $\angle 1$ and $\angle 2$ is equa

The value of x is _____.

4. **Challenge** $\angle 1$ and $\angle 2$ are complementary angles. The measure of $\angle 1$ is $(-4x + 52)^\circ$ and the measure of $\angle 2$ is $(7x + 17)^\circ$. Find the value of x. Then find the measures of $\angle 1$ and $\angle 2$. The figure is not drawn to scale.

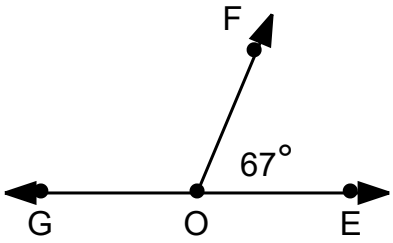


x = _____

m$\angle 1$ = _____ °

m$\angle 2$ = _____ °

5. **Error Analysis** In the figure, $\angle EOG$ is a straight angle. Charlie incorrectly says the measure of $\angle FOG$ is 23°. What is the measure of $\angle FOG$? What error might Charlie have made?

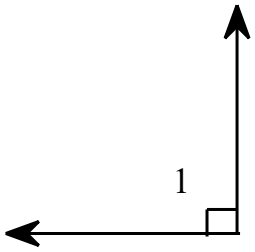


The measure of $\angle FOG$ is _____ °.

What error might Charlie have made?

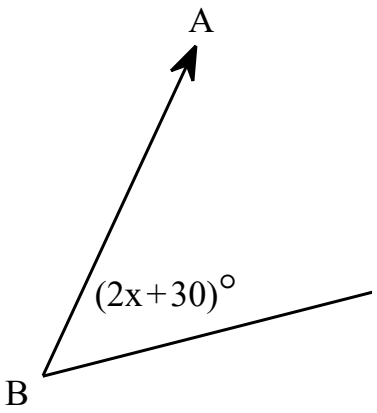
- ○ **A.** Charlie found the supplement instead of the complement.
- ○ **B.** Charlie found the complement instead of the supplement.
- ○ **C.** Charlie found the measure of $\angle EOF$ instead of $\angle FOG$.

6. The measure of $\angle 1$ is $(5x - 60)^\circ$. Find the value of x.



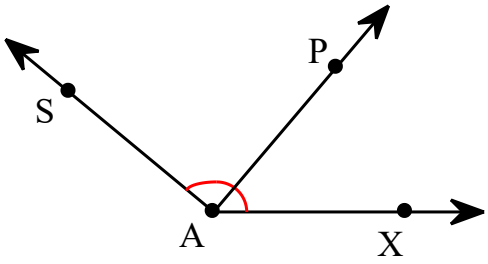
x = _____

7. The measure of $\angle ABC$ is 60°. Find the value of x.



x = _____

8. Given the measure of two of the angles, find the measure of the third angle.

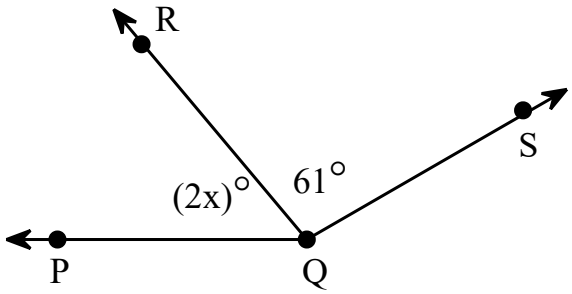


$\angle SAX = 137^\circ$
$\angle PAX = 63^\circ$

What is the measure of $\angle SAP$?

_____ $^\circ$ (Simplify your answer.)

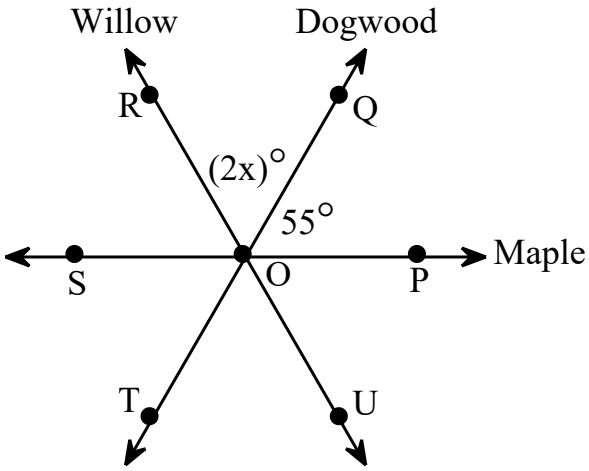
9. The measure of $\angle PQS$ is 119°. What is the value of x?



(The figure is not shown to scale.)

The value of x is _____. (Simplify your answer.)

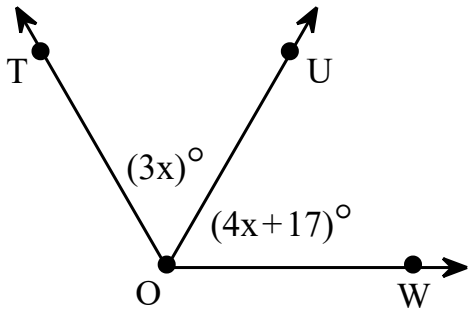
10. **Street Layout** Three streets, Maple, Dogwood, and Willow, all share an intersection, labeled O in the figure. The measure of the acute angle between Maple and Dogwood, $\angle POQ$, is 55°. The measure of $\angle POR$ is 115°. What is the value of x? Use pencil and paper. Explain how the measures of the angles let you check your work.



(The figure is not shown to scale.)

The value of x is _____. (Simplify your answer.)

11. The measure of $\angle TOW$ is 150°. What is the value of x? Use pencil and paper. Give the measures of the angles. Explain how you can use them to check your work.



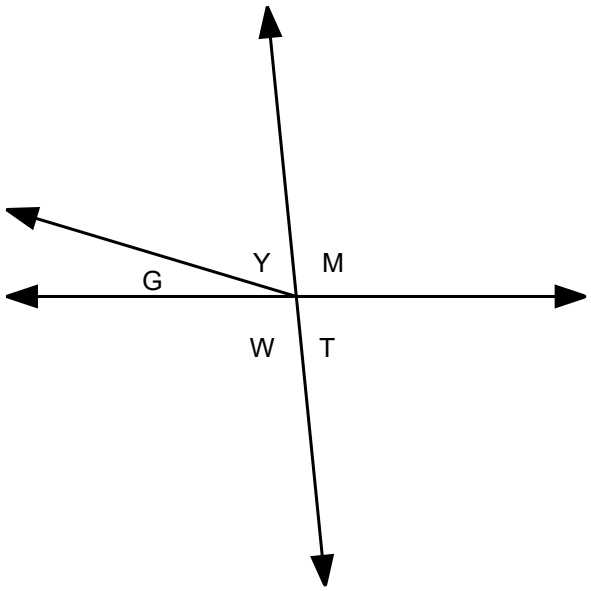
(The figure is not shown to scale.)

The value of x is _____. (Simplify your answer.)

12. Find the measure of the complement of a 19° angle.

The measure of the complement of a 19° angle is _____°. (Simplify your answer. Type a whole number or a decimal.)

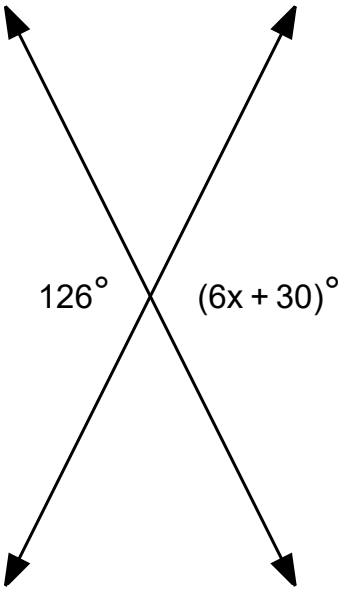
13. Find the pair of vertical angles in the figure.



Which pair of angles are vertical angles?

- **A.** $\angle T$ and $\angle Y$
- **B.** $\angle W$ and $\angle T$
- **C.** $\angle G$ and $\angle Y$
- **D.** $\angle W$ and $\angle M$

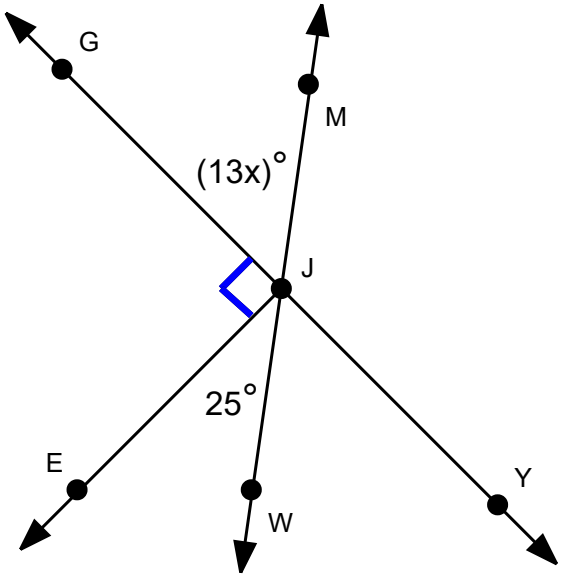
14. Find the value of x.



(The figure is not to scale.)

The value of x is _____.

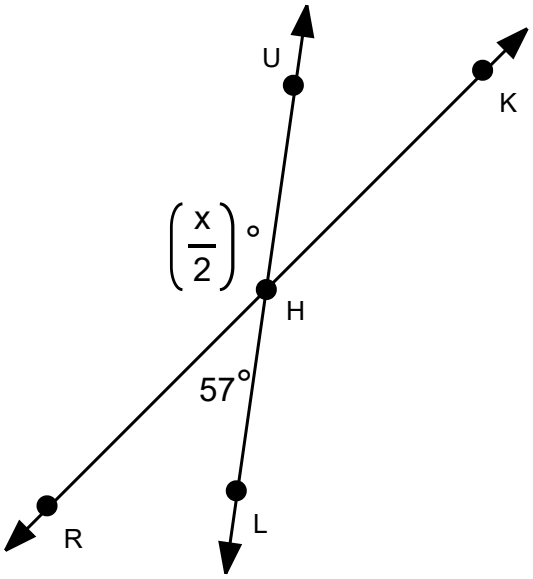
15. Find the value of x.



(The figure is not to scale.)

The value of x is _____.

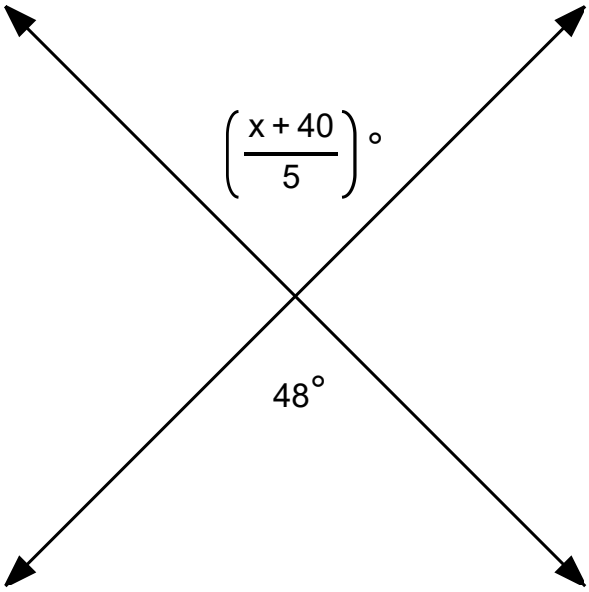
16. **Reasoning** Use vertical angles to find the value of x. Use pencil and paper. Is it possible to find the value of x without using vertical angles? Explain your reasoning.



(The figure is not to scale.)

The value of x is _____.

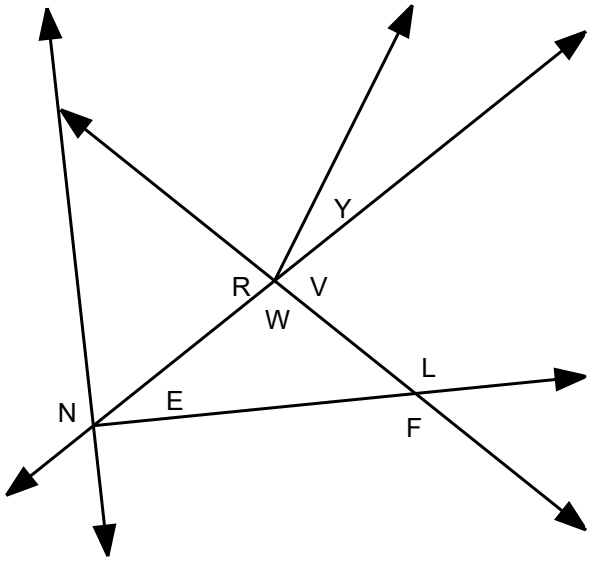
17. Find the value of x.



(The figure is not to scale.)

The value of x is _____.

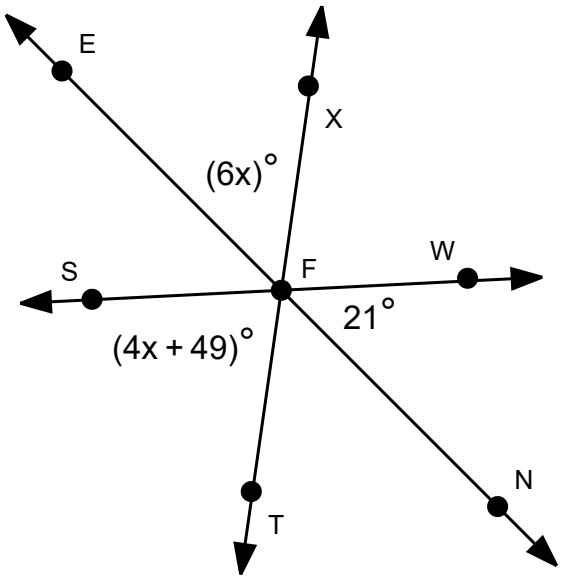
18. **Multiple Representations** Name the angle pairs that are vertical angles. Use paper and pencil. Describe an instance where you see vertical angles every day.



Select all angle pairs that are vertical angles.

- ☐ **A.** ∠F and ∠L
- ☐ **B.** ∠Y and ∠W
- ☐ **C.** ∠R and ∠V
- ☐ **D.** ∠E and ∠N

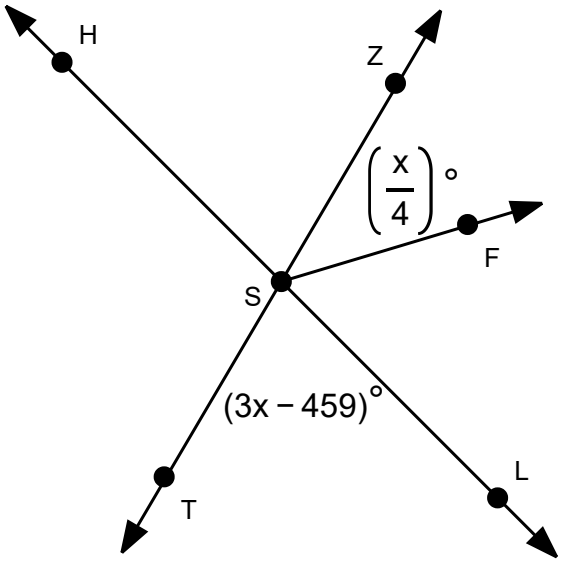
19. Find the value of x.



(The figure is not to scale.)

The value of x is _____.

20. **Challenge** In the figure, ∠HSZ is vertical to ∠TSL. Find the value of x given that $m\angle HSF = 100^\circ$. Then find m∠HSZ, m∠TSL, m∠HST, m∠ZSF, and m∠FSL.



(The figure is not to scale.)

The value of x is _____.

Find the angle measures.

m∠HSZ = _____ °m∠ZSF = _____

m∠TSL = _____ °m∠FSL = _____

m∠HST = _____ °

1. 14

   D. Taniy set the given expression equal to 90.

---

2. 318

---

3. B.
   Write an equation where the sum of the measures of $\angle 1$ and $\angle 2$ is equal to 90°.

   5

---

4. 7

   24

   66

---

5. 113

   B. Charlie found the complement instead of the supplement.

---

6. 30

---

7. 15

---

8. 74

---

9. 29

---

10. 30

11. 19

12. 71

13. D. $\angle W$ and $\angle M$

14. 16

15. 5

16. 246

17. 200

18. A. $\angle F$ and $\angle L$, C. $\angle R$ and $\angle V$

19. 11

20. 172

57

43

57

80

123

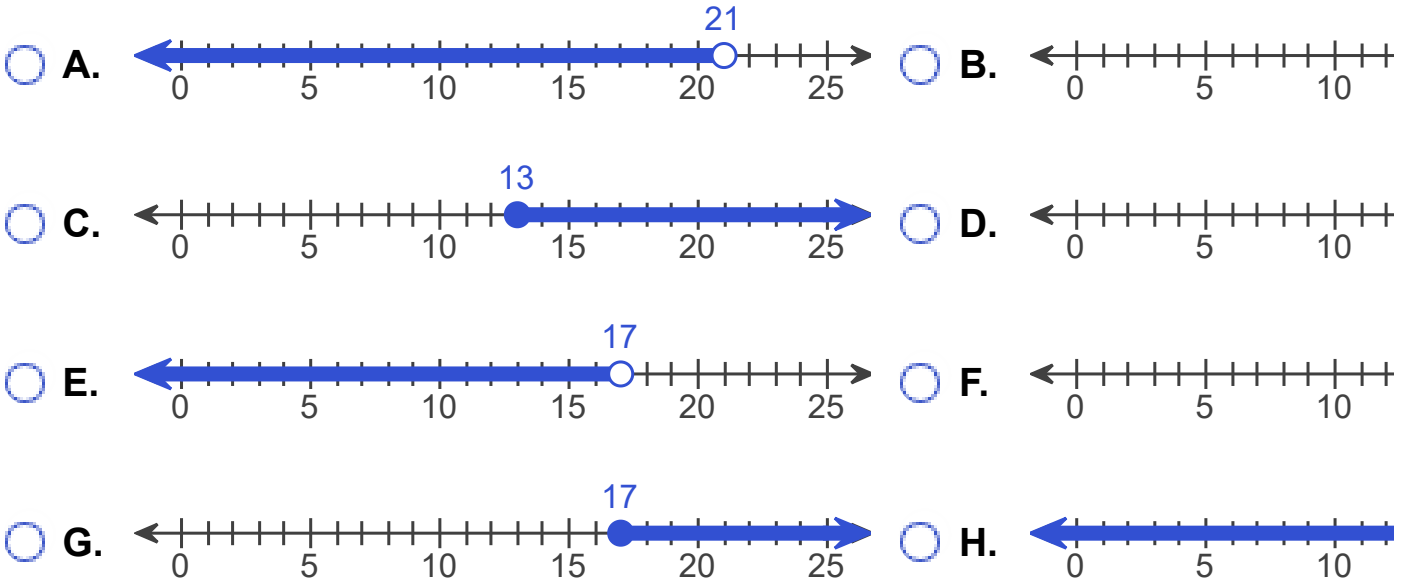
Student: _____	**Instructor:** Megan Klufas	
Date: _____	**Course:** Upcoming 7th Grade Summer Packet 2020	**Assignment:** Week #9: Inequalities

1. **Error Analysis** A math test asks the students to solve the inequality $x - 4 < 17$, and then graph the solutions. Mason said the solutions are $x < 13$ and graphed the solutions as shown below. Solve the inequality and graph the solutions. What error might Mason have made?

What are the solutions?

x (1) _____ _____

Which graph below shows the solutions?



What error might Mason have made?

- **A.** He did not fill in the circle on the graph when he should have.
- **B.** To solve the inequality, he added instead of subtracted.
- **C.** To solve the inequality, he subtracted instead of added.

D. He shaded the line on the graph to the left when he should have shaded the

(1)
- ≤
- <
- ≥
- >

2. **Think About the Process** Solve the inequality $x - 3 < 16$. Determine what the graph of the solutions should look like for $x - 3 < 16$. Then graph the solutions.

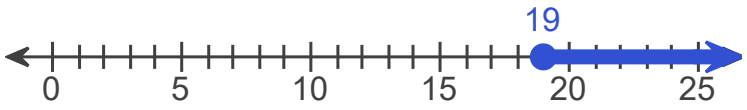
What are the solutions? Select the correct choice below and fill in the answer box to complete your choice.

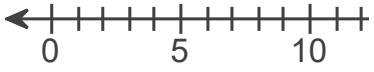
- **A.** $x >$ _____
- **B.** $x \leq$ _____
- **C.** $x <$ _____
- **D.** $x \geq$ _____

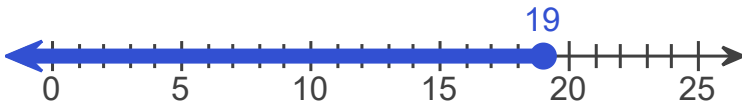
Which of the following is the correct description of how the graph should look?

- **A.** The graph should have a closed circle and the line should be shaded to t
- **B.** The graph should have an open circle and the line should be shaded to t
- **C.** The graph should have an open circle and the line should be shaded to t
- **D.** The graph should have a closed circle and the line should be shaded to t

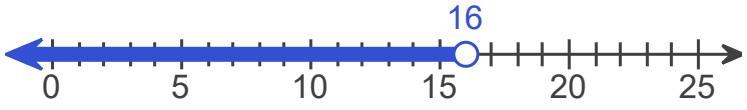
Choose the correct graph below.

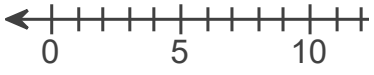
- **A.** 

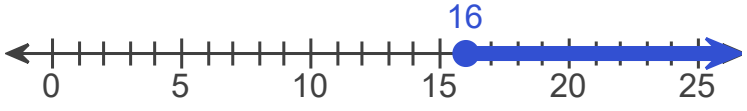
- **B.** 

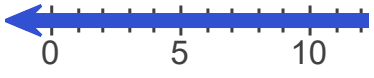
- **C.** 

- **D.** 

- **E.** 

- **F.** 

- **G.** 

- **H.** 

3. **Think About the Process** A number, x, plus 28 is less than 45. What inequality represents this situation? Solve the inequality.

Which of the following is the correct inequality?

- **A.** $x + 28 < 45$
- **B.** $x + 45 < 28$
- **C.** $x + 45 > 28$
- **D.** $x + 28 > 45$

What are the solutions? Select the correct choice below and fill in the answer box to complete your choice.

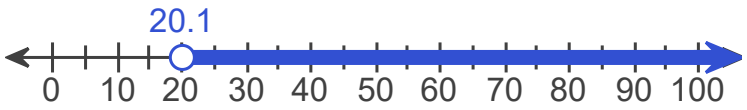
- **A.** $x >$ _____
- **B.** $x \leq$ _____
- **C.** $x <$ _____
- **D.** $x \geq$ _____

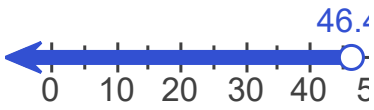
4. **Challenge** Find and graph the solutions for the inequality $x + 26.3 > 46.4$. Use pencil and paper. Describe a situation for the given inequality. Write three other inequalities using the other inequality symbols. Then graph each of the solutions.

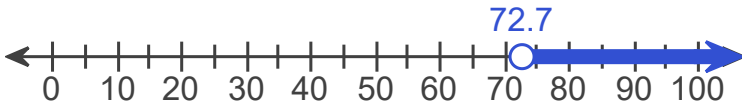
What are the solutions? Select the correct choice below and fill in the answer box to complete your choice.

- **A.** $x <$ _____
- **B.** $x >$ _____
- **C.** $x \leq$ _____
- **D.** $x \geq$ _____

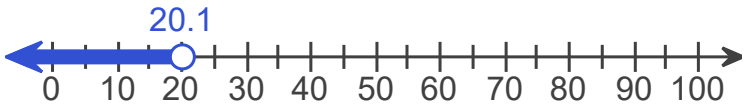
Choose the correct graph below.

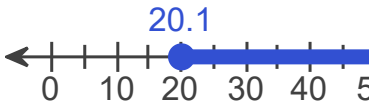
- **A.** 

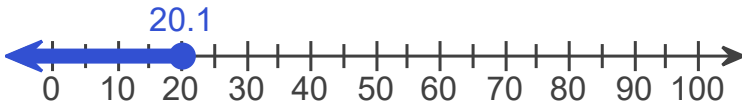
- **B.** 

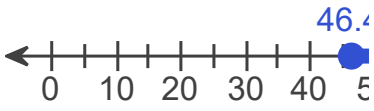
- **C.** 

- **D.** 

- **E.** 

- **F.** 

- **G.** 

- **H.** 

5. A type of fish for your aquarium costs $7 each. You can spend at most $56. How many of these fish can you buy? Write an inequality to model the problem. Then solve the inequality to find the number of fish.

Let f be the number of fish you can buy. Which inequality models the problem?

- **A.** $f + 7 \leq 56$
- **B.** $7f \geq 56$
- **C.** $f + 7 \geq 56$
- **D.** $7f \leq 56$

How many of these fish can you buy?

You can buy (1) _____ _____ fish.

(1)
- at least
- exactly
- at most

6. **Writing** Andrew plans to build a tree house that is $\frac{1}{4}$ the size of Cynthia's tree house. Andrew plans to make the area of his tree house at least 12 square feet. Write and solve an inequality to find the area of Cynthia's tree house. Use pencil and paper. Describe how you know which tree house is larger without solving the inequality.

Let x be the area of Cynthia's tree house. Complete the inequality.

$\frac{1}{4}x(1)$ _____ 12

The area of Cynthia's tree house is at least _____ square feet.

(1)
- ○ ≥
- ○ <
- ○ >
- ○ ≤

7. A teacher writes the inequality $x \div 7 > 14$ on the board. A student solves the inequality incorrectly and gets the result $x > 2$. What is the correct result? What is the student's error?

What is the correct result?

x (1) _____ _____

Why is the student's result incorrect?

- **A.** The student should have added, not divided.
- **B.** The inequality sign in the result should be $<$, not $>$.
- **C.** The result should be an equation, not an inequality.
- **D.** The student should have multiplied, not divided.

(1) ○ $>$ ○ $\leq$
○ $=$
○ $\geq$
○ $<$

8. **Challenge** A student needs three pieces of wire for a science project. The second piece must be 3 times as long as the first. The third piece must be 2 times as long as the second. The student has 300 centimeters of wire to make the three pieces. Write an inequality that represents this situation. What are the possible lengths for the shortest piece of wire?

Let x be the length of the first piece of wire. Select the inequality that models this situation.

- ○ **A.** $x + 3x + 2(3x) < 300$
- ○ **B.** $x + 3x + 2(3x) \leq 300$
- ○ **C.** $x + 3x + 2x \leq 300$
- ○ **D.** $x + 3x + 2x < 300$

The length of the shortest piece must be (1) _____ _____ centimeters.

(1) ○ greater than or equal to ○ greater than
○ less than or equal to
○ equal to
○ less than

9. Mark and Julie Pierce are celebrating their 15th anniversary by having a reception at a local reception hall. They have budgeted $2,000 for their reception. The reception hall charges a $70 cleanup fee plus $32 per person. Write an inequality that you can use to find the greatest number of people that they can invite and still stay within their budget. Then solve and graph the inequality.

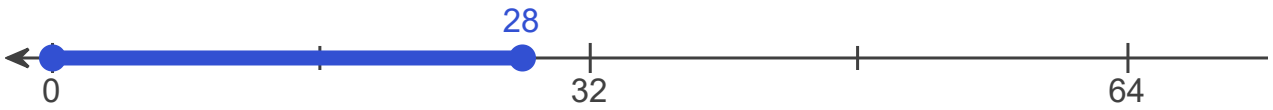
Which inequality models the situation?

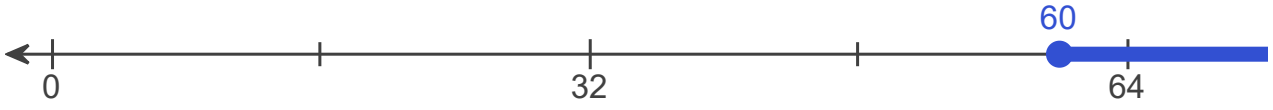
- **A.** $70n + 32 \geq 2{,}000$
- **B.** $32n + 70 \geq 2{,}000$
- **C.** $70n + 32 \leq 2{,}000$
- **D.** $32n + 70 \leq 2{,}000$

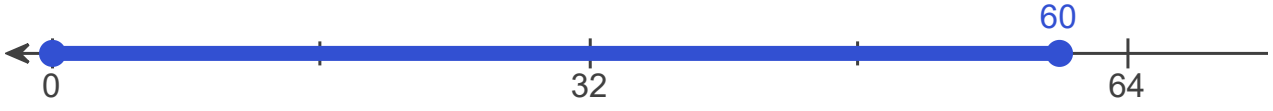
Which inequality represents the solutions?

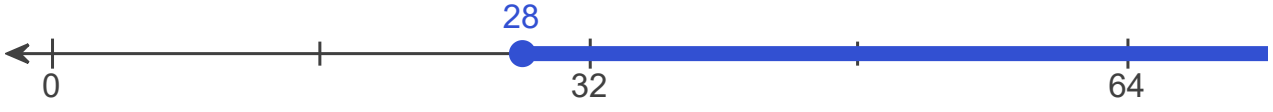
- **A.** $n \leq 60$
- **B.** $n \geq 60$
- **C.** $n \geq 28$
- **D.** $n \leq 28$

Which graph represents the solutions?

- **A.** 

- **B.** 

- **C.** 

- **D.** 

10. **Think About the Process** Ben bowled 149 and 210 in his first two games. He wants to bowl an average of at least 190 in three games. Let x be his score in the third game. Which inequality symbol should you use for this situation if 190 is on the right side? Write an inequality for this problem. Then solve that inequality and interpret the result.

Which inequality symbol should you use for this situation if 190 is on the right side?

- **A.** >
- **B.** ≥
- **C.** ≤
- **D.** <

Ben must bowl at least _____ in his third game in order to have an average of at least 190.

11. Which situation below does the inequality $5 + 6n \leq 50$ represent?

A. You need to read 50 pages of a novel. You read 5 pages per minute. After l minutes will you have fewer than 6 pages left?

B. You have $50 to buy your friends lunch. If each lunch costs $6 and you plar $5 dessert, how many friends can you bring?

C. You have $50 to buy your friends lunch. If each lunch costs $5 and you plar $6 dessert, how many friends can you bring?

The inequality $5 + 6n \leq 50$ represents situation (1) _____

(1)
- A.
- C.
- B.

12. Solve each inequality. Then compare the solutions.

$2x + 8 > 12$ $-4x + 19 < 11$

$2x + 8 > 12$ (1)

x _____ _____

$-4x + 19 < 11$ (2)

x _____ _____

Compare the solutions for $2x + 8 > 12$ and $-4x + 19 < 11$. Choose the correct answer below.

- **A.** The inequalities have no common solutions.
- **B.** The inequalities have one common solution.
- **C.** The inequalities have the same solutions.
- **D.** The inequalities have some common solutions.

(1)
- $\leq$
- $<$
- $\geq$
- $>$

(2)
- $\geq$
- $\leq$
- $<$
- $>$

13. **Error Analysis** On a recent math test the students were asked to write and graph the solution for the statement shown below. Allison said the solution is $n > -11$. Write and graph the solution for the statement shown below. What error might Allison have made?

105 subtracted from -21 times a number is less than -126.

Which inequality represents the situation?

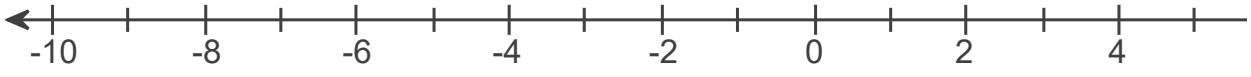
- **A.** $-21x - 105 < -126$
- **B.** $105 - 21x < -126$
- **C.** $105 - 21x > -126$
- **D.** $-21x - 105 > -126$

Which graph represents the correct solutions?

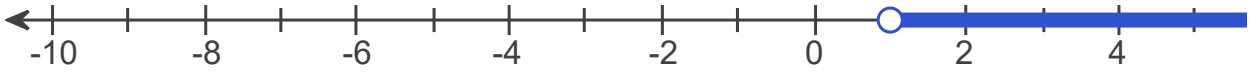
- **A.**

- **B.**

- **C.**



- **D.**



What error might Allison have made?

- **A.** Allison reversed the direction of the inequality symbol. She should have
- **B.** Allison added 105 to both sides of the inequality. She should have subtr
- **C.** Allison subtracted 105 from both sides of the inequality. She should hav
- **D.** Allison forgot to reverse the direction of the inequality symbol.

14. **Car Rental** Zachary can spend no more than $98 per day to rent a car. A car rents for $42 per day plus $0.20 per mile. Write an inequality for this situation. Graph the solutions on a number line. What does the graph show?

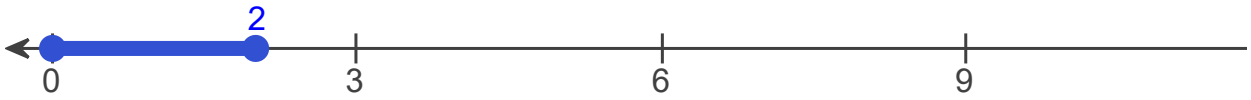
Which inequality represents the situation?

- **A.** $42m + 0.20 \geq 98$
- **B.** $42 + 0.20m \leq 98$
- **C.** $42m + 0.20 \leq 98$
- **D.** $42 + 0.20m \geq 98$

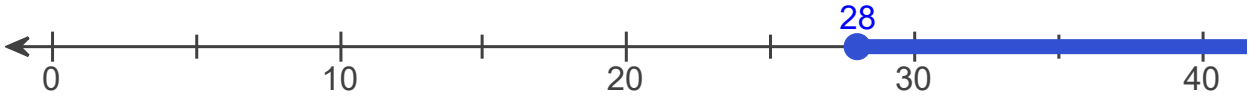
Which graph represents the solutions?

A.

B.



C.



D.

What does the graph show?

- **A.** $m \geq 28$; 28 is the maximum number of miles that Zachary can drive in or
- **B.** $m \leq 280$; 280 is the maximum number of miles that Zachary can drive in
- **C.** $m \leq 2$; 2 is the maximum number of miles that Zachary can drive in one
- **D.** $m \geq 2$: 2 is the minimum number of miles that Zachary can drive in one d

15. Write, solve, and graph the inequality.

15 times a number plus 31 is greater than 6.

Which inequality models the statement?

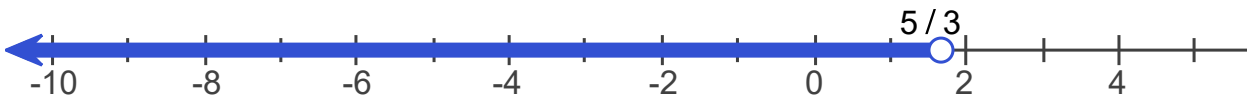
- **A.** $15x + 31 < 6$
- **B.** $15x + 31 \geq 6$
- **C.** $15x + 31 \leq 6$
- **D.** $15x + 31 > 6$

Which inequality represents the solutions?

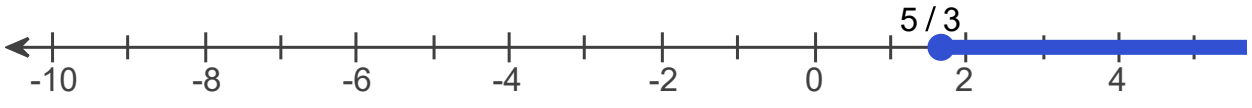
- **A.** $x \geq \frac{5}{3}$
- **B.** $x < \frac{5}{3}$
- **C.** $x \leq -\frac{5}{3}$
- **D.** $x > -\frac{5}{3}$

Which of the following is the graph of the solutions?

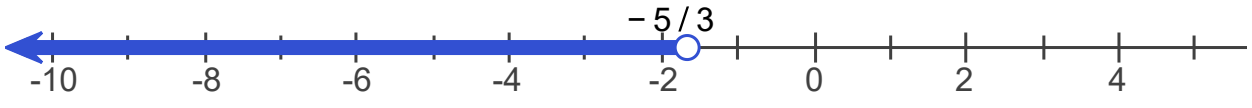
- **A.**



- **B.**



- **C.**



- **D.**

$-5/3$

16. **Challenge** The heights of four of the starting players on a basketball team are 6'3", 5'10", 6'5", and 6'10". How tall must the fifth player be in order for the starting players to have an average height of at least 6'6"? Write an inequality to find the height of the fifth player. Graph the solutions on a number line. (Hint: First convert all heights to inches.) What do the solutions represent?

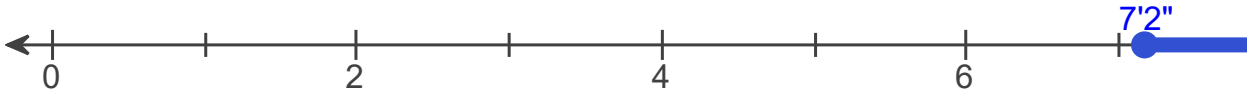
Which inequality represents the situation?

- **A.** $\frac{h - 304}{5} \leq 90$
- **B.** $\frac{h + 256}{5} \geq 78$
- **C.** $\frac{h - 256}{5} \leq 90$
- **D.** $\frac{h + 304}{5} \geq 78$

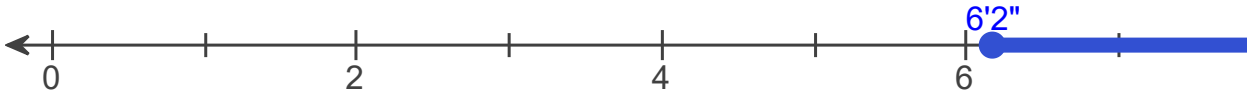
Which graph represents the solutions?

- **A.**

- **B.**



- **C.**



- **D.**

What do the solutions represent?

- **A.** The fifth player must be at least 6'2" tall.
- **B.** The fifth player can be no taller than 7'2".

C. The fifth player can be no taller than 6'2".

D. The fifth player must be at least 7'2" tall.

---

17. Michelle says that the solutions of the inequality are $y < -0.2$. Find, describe, and correct the error in Michelle's work, shown here.

$$\begin{aligned} 4(5y-3) &< 8 \\ 20y-12 &< 8 \\ 20y &< - \\ y &< - \end{aligned}$$

What was Michelle's mistake?

A. Michelle forgot to reverse the inequality symbol.

B. Michelle did not distribute 4 correctly.

C. Michelle subtracted instead of adding.

D. Michelle multiplied instead of dividing.

What are the solutions of the inequality? Select the correct choice below and fill in the answer box to complete your choice.

A. $y \geq$ _____

B. $y <$ _____

C. $y >$ _____

D. $y \leq$ _____

---

18. **Writing** Describe and correct the error in the work shown. Use pencil and paper. Describe two other mistakes someone could make in solving this inequality and find the incorrect result that each would produce.

$$2 + 3(x - 6) < -28$$
$$2 + 3x - 18 < -28$$
$$-16 + 3x < -28$$
$$3x < -12$$
$$x < 4$$

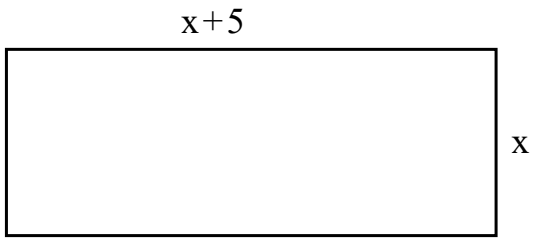
What error is most likely?

- **A.** The Addition Property of Inequality was used incorrectly.
- **B.** The Distributive Property was used incorrectly.
- **C.** The Division Property of Inequality was used incorrectly.

What are the solutions of the inequality? Select the correct choice below and fill in the answer box to complete your choice.

- **A.** $x >$ _____
- **B.** $x <$ _____
- **C.** $x \leq$ _____
- **D.** $x \geq$ _____

19. For what values of x is the perimeter of the figure greater than 162 meters?



Select the correct choice below and fill in the answer box to complete your choice.

- **A.** $x \leq$ _____
- **B.** $x \geq$ _____
- **C.** $x <$ _____
- **D.** $x >$ _____

---

20. **Farming** A farmer harvests 11 bushels of green peppers, 24 bushels of red peppers, and 12 bushels of yellow peppers every day. The farmer wants to know how many days, d, it will take to harvest more than 300 bushels of peppers. Write an inequality that models this situation. How many days will it take to harvest more than 300 bushels of peppers?

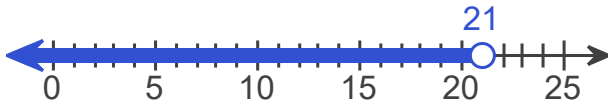
Write an inequality that models the situation. Choose the correct answer below.

- **A.** $300 > 11d + 24d + 12d$
- **B.** $11d + 24d + 12d > 300$
- **C.** $11d + 24d + 12d < 300$
- **D.** $11d - 24d - 12d > 300$

It will take _____ days to harvest 300 bushels. (Type a whole number.)

1. (1) <

   21

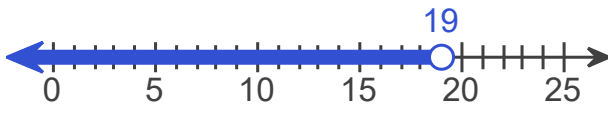
   A. 

   C. To solve the inequality, he subtracted instead of added.

---

2. C. x < **19**

   B.
   The graph should have an open circle and the line should be shaded to the left.

   H. 

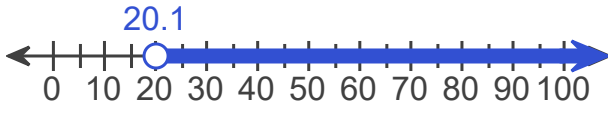
---

3. A. x + 28 < 45

   C. x < **17**

---

4. B. x > **20.1**

   A. 

---

5. D. 7f ≤ 56

   (1) at most

   8

---

6. (1) ≥

48

---

7. (1) >

98

D. The student should have multiplied, not divided.

---

8. B. $x + 3x + 2(3x) \leq 300$

(1) less than or equal to

30

---

9. D. $32n + 70 \leq 2{,}000$

A. $n \leq 60$

C. 

---

10. B. ≥

211

---

11. (1) B.

---

12. (1) >

    2

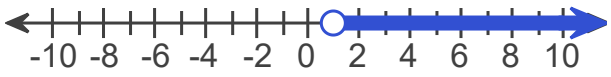
    (2) >

    2

    C. The inequalities have the same solutions.

---

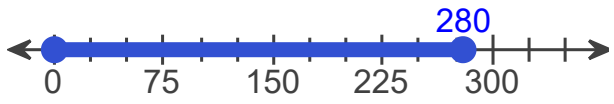
13. A. $-21x - 105 < -126$

    D. 

    C.
    Allison subtracted 105 from both sides of the inequality. She should have added.

---

14. B. $42 + 0.20m \leq 98$

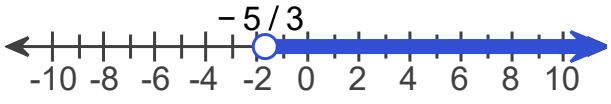
    A. 

    B.
    $m \leq 280$; 280 is the maximum number of miles that Zachary can drive in one day.

---

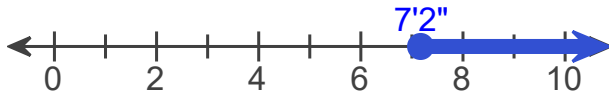
15. D. $15x + 31 > 6$

    D. $x > -\frac{5}{3}$

    D. 

---

16. D. $\frac{h + 304}{5} \geq 78$

B. 

D. The fifth player must be at least 7'2" tall.

---

17. C. Michelle subtracted instead of adding.

B. $y <$ **1**

---

18. C. The Division Property of Inequality was used incorrectly.

B. $x <$ **−4**

---

19. D. $x >$ **38**

---

20. B. $11d + 24d + 12d > 300$

7
