Bluebonnet Learning
Secondary Mathematics
EDITION 1

Grade 6

Assessments

STUDENT EDITION

Acknowledgment

Thank you to all the Texas educators and stakeholders who supported the review process and provided feedback. These materials are the result of the work of numerous individuals, and we are deeply grateful for their contributions.

Notice

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MODULE
1

Composing and Decomposing

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End of Topic Assessment

Name _____ Date _____

1. Which statement shows the correct prime factorization for the number provided?

☐ **A.** $100 = 2 \cdot 5^2$

☐ **B.** $60 = 3 \cdot 4 \cdot 5$

☐ **C.** $48 = 2^3 \cdot 3$

☐ **D.** $36 = 2^2 \cdot 3^2$

2. Determine the unknown addend that makes the expression equivalent to 150.

$15(\ \_\_\_\_\_\ + 3)$

3. Which two expressions each represent $\frac{5}{11}$?

☐ **F.** $5 \overline{)11}$ and $5 \div 11$

☐ **G.** $11 \overline{)5}$ and $11 \div 5$

☐ **H.** $11 \overline{)5}$ and $5 \div 11$

☐ **J.** $5 \overline{)11}$ and $11 \div 5$

4. Which statement about 8 multiplied by $\frac{1}{3}$ must be true?

☐ **A.** The product is greater than 8.

☐ **B.** The product is between $\frac{1}{3}$ and 8.

☐ **C.** The product is less than $\frac{1}{3}$.

☐ **D.** The product is between 7 and 8.

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5. Chloe has $\frac{7}{8}$ yard of spirit ribbon to make hair bows for her friends. It takes $\frac{1}{12}$ yard to make each hair bow. Chloe will use the following expression to calculate the number of hair bows that she can make from $\frac{7}{8}$ yard spirit ribbon.

$$\frac{7}{8} \div \frac{1}{12}$$

Which expression can also be used to calculate the number of hair bows that can be made from $\frac{7}{8}$ yard of spirit ribbon?

☐ **F.** $\frac{8}{7} \cdot \frac{1}{12}$

☐ **G.** $\frac{8}{7} \cdot \frac{12}{1}$

☐ **H.** $\frac{7}{8} \cdot \frac{1}{12}$

☐ **J.** $\frac{7}{8} \cdot \frac{12}{1}$

6. Select **TWO** fractions that are equivalent to $\frac{2}{8}$.

☐ **A.** $\frac{7}{28}$

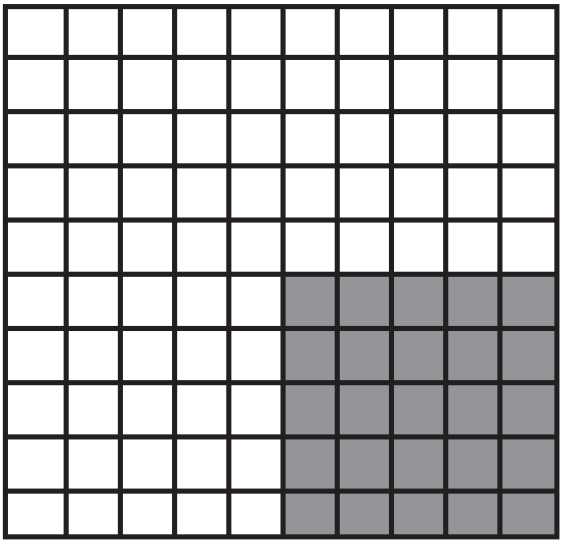
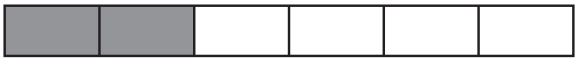
☐ **B.** $\frac{4}{32}$

☐ **C.** $\frac{4}{10}$

☐ **D.** $\frac{6}{12}$

☐ **E.** $\frac{3}{12}$

7. Which of the models represent the benchmark fraction $\frac{1}{4}$?

Model	$\frac{1}{4}$	A fraction other than $\frac{1}{4}$
	☐	☐
	☐	☐
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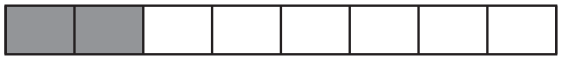
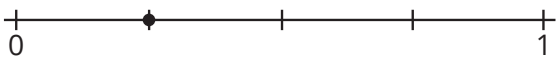
	☐	☐
	☐	☐

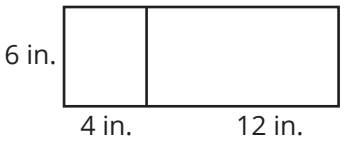
8. Order the numbers from least to greatest.

$\frac{7}{5}, \frac{1}{16}, 1\frac{1}{8}, \frac{7}{12}$

9. Calculate the product. Write your answer in lowest terms.

$\frac{8}{9} \cdot 2\frac{4}{7}$

10. Use the diagram to answer the question.



Determine the area of the rectangle in square inches.

11. Mia has 6 teaspoons of salt. She puts $\frac{1}{4}$ teaspoon of salt in each batch of blueberry muffins that she makes. How many batches of muffins can Mia make?

Name _____ Date _____

1. Which set of measures **CANNOT** be angle measures of a triangle?

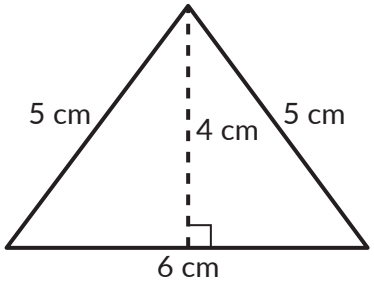
☐ **A.** 55°, 55°, 71°

☐ **B.** 2°, 2°, 176°

☐ **C.** 11.9°, 19.1°, 149°

☐ **D.** 58°, 63°, 59°

2. Ms. Chen will paint a triangular tile. An image of the tile is shown.



Which of the following can be used to calculate the area of the triangular tile?

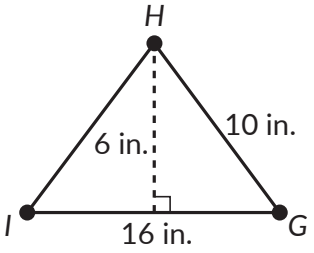
☐ **F.** $A = (6 \text{ cm})(4 \text{ cm})$

☐ **G.** $A = (6 \text{ cm})(5 \text{ cm})$

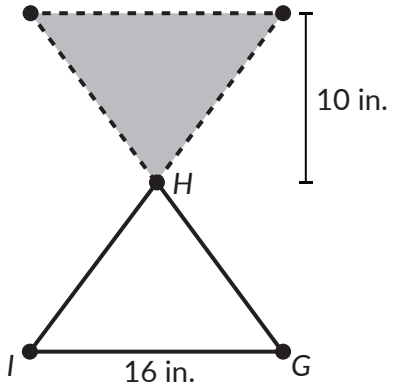
☐ **H.** $A = \frac{1}{2}(6 \text{ cm})(4 \text{ cm})$

☐ **J.** $A = \frac{1}{2}(6 \text{ cm})(5 \text{ cm})$

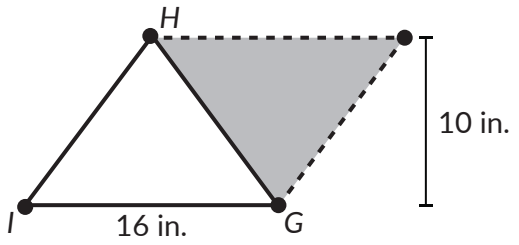
3. Which diagram best models the area formula for Triangle *GHI*?



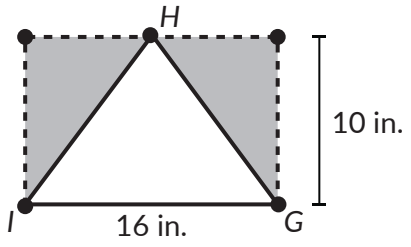
☐ **A.**



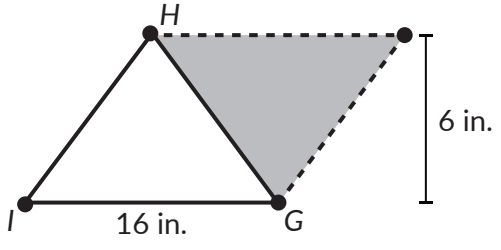
☐ **B.**



☐ **C.**



☐ **D.**



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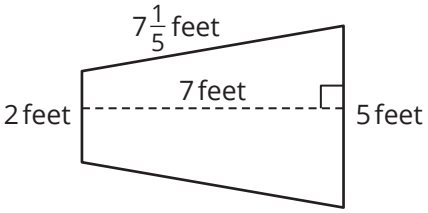
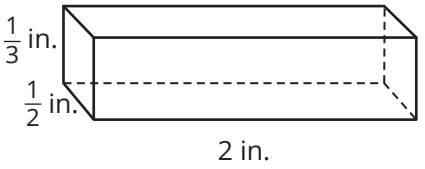
4. The planning committee submitted a plan to the town architect to revitalize the town square. Their plan includes a new flagpole with a concrete base in the shape of a trapezoid. The base of the trapezoid and its dimensions are shown.



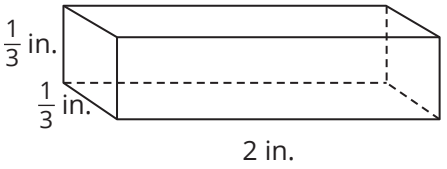
What is the area of the concrete base proposed by the planning committee in square feet?

5. Noah is comparing four geometric solids. Order the volume of the solids from greatest to least.

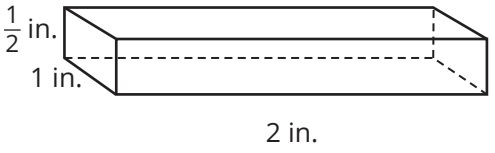
Solid A



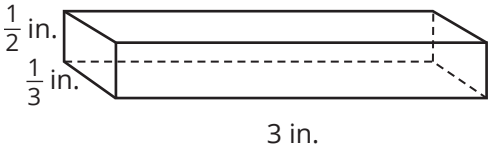
Solid B



Solid C



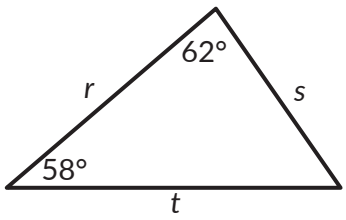
Solid D



6. Determine whether it is possible to form a triangle using the set of segments with the given measurements. Select **TWO** correct answers.

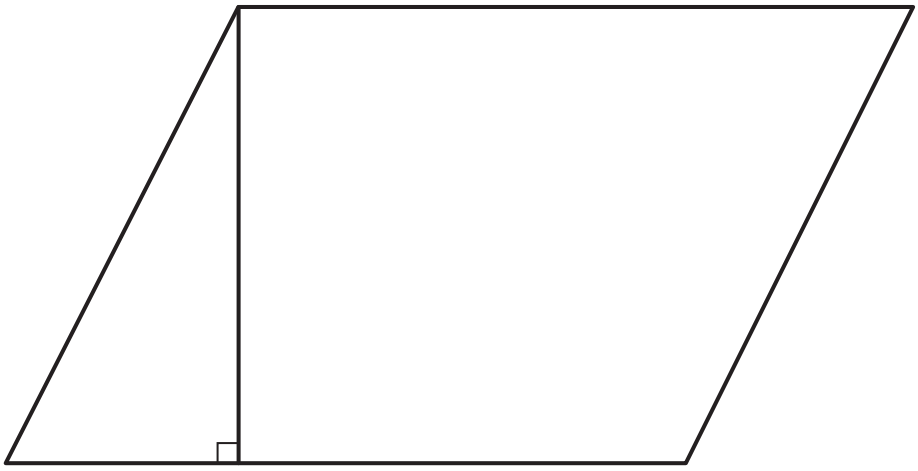
- ☐ **F.** 11 in., 8 in., 16 in.
- ☐ **G.** 5 cm, 5 cm, 10 cm
- ☐ **H.** 4 ft, 3 ft, $3\frac{1}{2}$ ft
- ☐ **J.** 12 m, 3 m, 8 m
- ☐ **K.** 9.1 yards, 7 yards, 16.2 yards

7. Order the side lengths from shortest to longest.

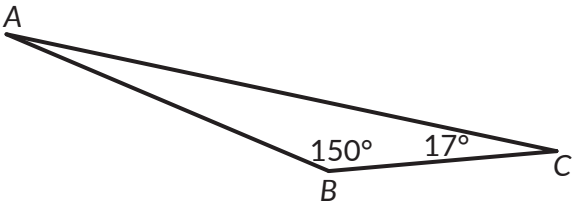


8. The area of a parallelogram is 27 square meters, and the length of the parallelogram is 9 meters. What is the width of the parallelogram in meters?

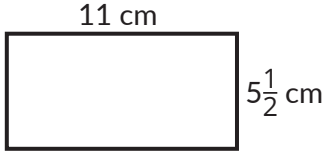
9. Use a ruler to measure the dimensions of the given parallelogram to the nearest centimeter. What is the area of the parallelogram in square centimeters?



10. In triangle *ABC* shown below, what is the measure of $\angle A$ in degrees?



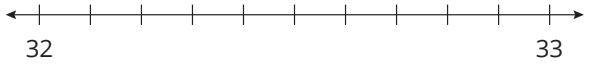
11. The rectangle shown represents the base of a rectangular prism. The height of the prism is 6 cm. Determine the volume of the prism.



End of Topic Assessment

Name _____ D ate _____

1. Noah correctly labeled the numbers 32.6, $32\frac{1}{4}$, 32.98, and $32\frac{4}{5}$ on the number line below.



Which number was located closest to 32?

- ☐ **A.** 32.6
- ☐ **B.** $32\frac{1}{4}$
- ☐ **C.** 32.98
- ☐ **D.** $32\frac{4}{5}$

2. The heights, in meters, of a collection of plants are shown in the table. Order the plants from the tallest plant to the shortest plant.

Plant	Height (in meters)
A	$\frac{3}{2}$
B	0.65
C	$\frac{6}{10}$
D	1
E	0.06

3. A painter took 112.5 hours to complete a task. A second painter will take 2.5 times as long to complete the task. Based on the information, which statement is true?

☐ **F.** The task will take the second painter 115 hours to complete, because $112.5 + 2.5 = 115$.

☐ **G.** The task will take the second painter 120.5 hours to complete, because $112.5 + 2.5 = 120.5$.

☐ **H.** The task will take the second painter 281.25 hours to complete, because $112.5 \cdot 2.5 = 281.25$.

☐ **J.** The task will take the second painter 301.25 hours to complete, because $112.5 \cdot 2.5 = 301.25$.

4. A rectangle has an area of 90 square centimeters and a height of 12.5 centimeters. What is the length of the base?

☐ **A.** 7.2 cm

☐ **B.** 72 cm

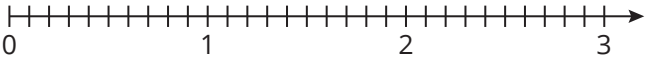
☐ **C.** 112.5 cm

☐ **D.** 1125 cm

5. Plot a point to represent each value on the number line shown. Label each point with the value.

☐ **a.** $\frac{1}{4}$ ☐ **b.** $1\frac{2}{5}$ ☐ **c.** $2\frac{1}{2}$

☐ **d.** 0.88 ☐ **e.** 1.11



6. Olympic runners can complete the 400-meter dash in under one minute. The best times (in seconds) for six Olympic runners are shown. Order the times from the fastest time to the slowest time.

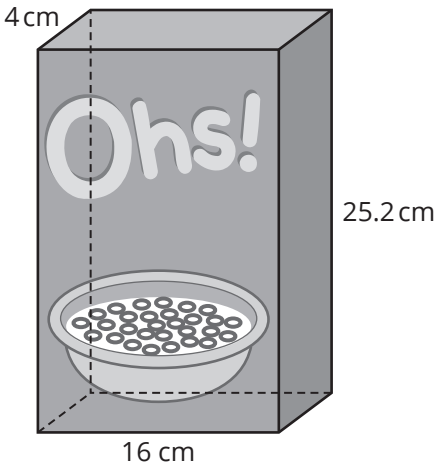
45.6	46.67	47.22	46.4
46.309	45.39		

7. Liam put the following items in his shopping cart at the warehouse store.

2 bottles of dish detergent	$5.39 per bottle
Laundry soap	$17.97 per bottle
4 packages of bar soap	$8.75 per package
2 packages of paper towels	$22.49 per package
3 packages of facial tissues	$12.77 per package

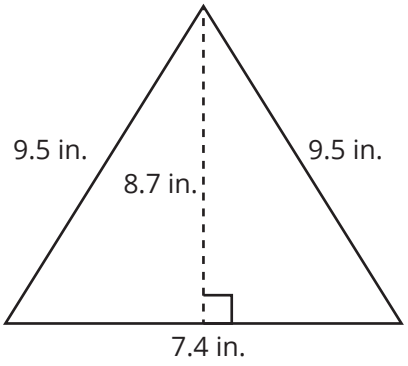
How much will Liam spend on laundry soap and bar soap?

8. The *Ohs!* cereal box is a right rectangular prism with the given dimensions in centimeters. What is the volume of the cereal box in cubic centimeters?



9. Crunchy Chewy snack mix comes in a box of 12 single-serve bags. You and two friends purchase 2 boxes of Crunchy Chewy snack mix for $30.96. You split the cost between the three of you. How much does each person pay?

10. Determine the area of the triangle shown.



GRADE 6

MODULE 2

Relating Quantities

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Name _____ Date _____

1. Which table shows an additive relationship?

☐ A.

Muffins sold	1	2	3	4	5
Amount earned (dollars)	4	8	12	16	20

☐ B.

Rectangle width (inches)	1	2	3	4	5
Rectangle length (inches)	5	10	15	20	25

☐ C.

Cups of water	1	3	5	7	9
Tablespoons of drink mix	3	9	15	21	27

☐ D.

Isaiah's age	1	3	5	7	9
Logan's age	4	6	8	10	12

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2. An art store orders 3 large marker boxes for every 8 small marker boxes. Which ratios could represent the number of large marker boxes to small marker boxes in an order from the art store? Select **TWO** correct ratios.

☐ **F.** 10 : 24

☐ **G.** 8 : 13

☐ **H.** 15 : 40

☐ **J.** 6 : 14

☐ **K.** 36 : 96

3. A custom shade of purple paint is made by mixing 5 parts of blue paint to 3 parts of red paint. The employees in the paint department of a home improvement store use this table to determine the amounts of blue and red paint needed to create this color for their customers.

Amount of Purple Paint	8 pints	12 pints
Amount of Blue Paint	5 pints	7.5 pints
Amount of Red Paint	3 pints	4.5 pints

How many pints of red paint is needed to make 28 pints of the custom shade of purple paint?

☐ **A.** 14 pints

☐ **B.** 10.5 pints

☐ **C.** 17.5 pints

☐ **D.** 16.8 pints

4. To make teams for the junior high field day, Gabriel needs to put 3 seventh-graders for every 4 eighth-graders on a team. Which table shows the relationship between the number of 7th-graders and the number of 8th-graders?

☐ F.

7th-Graders	8th-Graders
9	12
15	20
21	28
24	32

☐ G.

7th-Graders	8th-Graders
9	12
15	20
20	27
24	33

☐ H.

7th-Graders	8th-Graders
6	8
12	18
15	20
18	27

☐ J.

7th-Graders	8th-Graders
12	16
15	19
18	22
21	25

5. Mrs. Williams asked her students to write a situation that could describe the relationship between x and y as shown in the table below.

x	1	4	7	13
y	4	16	28	52

Which situation best describes the relationship between x and y?

☐ **A.** Avery ran 4 miles for every mile that Parker ran.

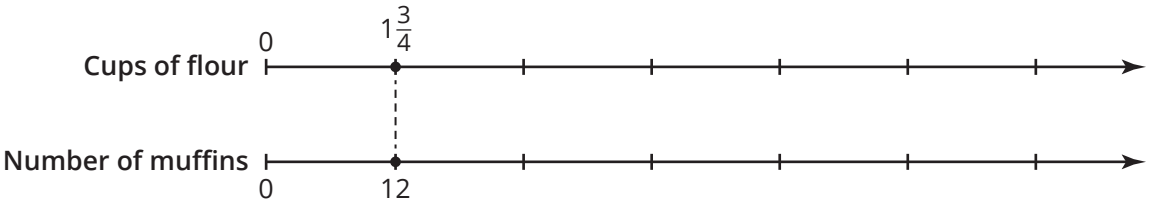
☐ **B.** Luna earned 16 dollars for every 2 dollars Lucas earned.

☐ **C.** Carlos bought 18 trading cards for every 15 Isaiah bought.

☐ **D.** Nahimana read 5 books for every book that Mason read.

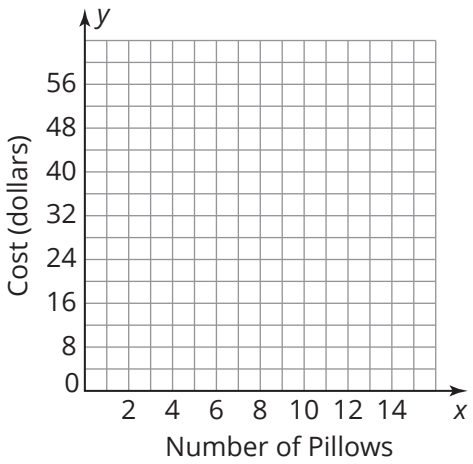
6. There are two groups of rectangles. In group A, the length of each rectangle is 4 units greater than the width. In group B, the length of each rectangle is double the width. Write an equation for both group A and group B. Then, determine which group of rectangles represents a multiplicative relationship. Explain your reasoning.

7. Carlos is using a double number line to determine the amount of flour he will use to make a batch of muffins. He wants to make a batch of 72 muffins. How much flour does he need?



8. A chef makes gift boxes using different ratios of cookies. One box of cookies has 3 orange oatmeal cranberry cookies for every 5 oatmeal raisin cookies. Another box has 4 oatmeal raisin cookies for every 5 peanut butter cookies. When both gift boxes have 20 oatmeal raisin cookies, which gift box has more total cookies? Explain your reasoning.

9. Parker can make a pillow using 1 yard of fabric. Fabric costs $4 for 1 yard. Create a graph to represent this relationship for 1, 2, 3, 5, and 10 pillows. Then, write an equation that represents the relationship between the number of pillows, x, and the cost in dollars, y.



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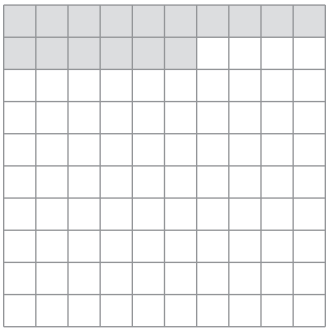
10. Two friends are keeping track of the calories that they burn while exercising. Nahimana uses an elliptical machine and burns 105 calories for 30 minutes. Sebastian uses a stair climber and burns 175 calories for 30 minutes. They are both burning calories at a steady rate. Complete the table to chart Nahimana's calorie expenditure for different amounts of time.

Nahimana's Exercise

Time (minutes)	5	10	20	30	45	75
Calories Burned				105		

11. The grid shown represents a whole. The grid is made up of equal-sized squares.



Write the number of shaded squares out of total squares as a percent.

12. A multi-colored package of straws has 4 red straws, 5 white straws, and 3 blue straws. How many straws in a package of 48 are blue?

End of Topic Assessment

Name _____ Date _____

1. Isaiah spent 80% of his savings on purchasing a new video gaming system. What fraction of his savings was spent on purchasing a new video gaming system?

☐ **A.** $\frac{8}{100}$

☐ **B.** $\frac{5}{8}$

☐ **C.** $\frac{4}{5}$

☐ **D.** $\frac{8}{1}$

2. The table shows the portion of a day that five students worked on decorating the gym for a dance.

Time Used	
Student	**Portion of a Day**
Parker	$\frac{2}{5}$
Luna	31.4%
Avery	$\frac{4}{8}$
Logan	47.6%
Sarah	$\frac{3}{10}$

Which list shows the students in order from the least amount of time used to the greatest amount of time used?

☐ **F.** Sarah, Luna, Logan, Avery, Parker

☐ **G.** Parker, Sarah, Luna, Avery, Logan

☐ **H.** Sarah, Luna, Parker, Logan, Avery

☐ **J.** Sarah, Parker, Luna, Avery, Logan

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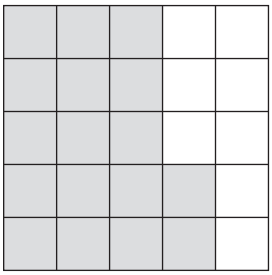
3. The shaded area on the grid represents the part of a square mural that is shaded. Each small square on the mural has the same dimensions.



Which percentage of the mural was shaded?

☐ **A.** 17%

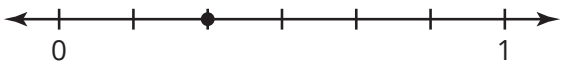
☐ **B.** 60%

☐ **C.** 64%

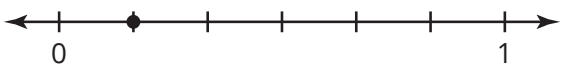
☐ **D.** 68%

4. The gas indicator on a car shows that the tank is $33\frac{1}{3}\%$ full. Which number line shows a point that represents $33\frac{1}{3}\%$?

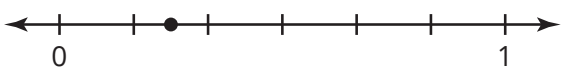
☐ **F.**



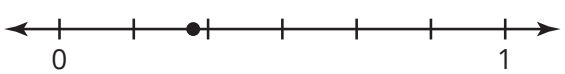
☐ **G.**



☐ **H.**



☐ **J.**

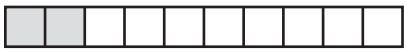


5. The shaded model represents 100%.

Which models represent 20%? Select **TWO** correct answers.

☐ **A.** 

☐ **B.** 

☐ **E.** 

☐ **C.** 

☐ **D.** 

6. Complete the table of values to show equivalent fractions, decimals, and percents. Write fractions in lowest terms.

Fraction	0	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$					
Decimal	0.0				0.500	0.625			
Percent	0%						75%	87.5%	100%

7. One hundred middle school students take a survey that asks them about their pets. Complete the table by representing the survey results as a fraction, decimal, and percent. Write fractions in lowest terms.

	Fraction	Decimal	Percent
35 out of 100 students said they have 3 or more cats.			
82 out of 100 students said they have a pet.			

8. Order the following numbers from greatest to least.

$1\frac{2}{5}$ 0.83 104% $\frac{4}{5}$ $\frac{108}{100}$ 49% 0.56

9. According to a survey at a local movie theater of teenagers aged 15–19, 45% of the teenagers selected horror movies as their favorite type of movie.

   If 135 teenagers selected horror movies as their favorite type of movie, then how many teenagers were surveyed? Explain your reasoning.

10. At a local dog kennel, dogs are fed differently depending on how much they weigh. The kennel has 120 dogs. The table shows how many dogs are in each weight group.

Weight	Males	Females
less than 25 pounds	13	30
25–50 pounds	22	29
more than 50 pounds	10	16

   What fraction of the dogs who weigh more than 50 pounds are female? Represent the value as a fraction in lowest terms and as a decimal rounded to the nearest hundredth.

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Name _____ Date _____

Grade 6 Customary and Metric Conversion Chart (located on the last page of the assessment) is available to use on this assessment.

1. Isaiah prepares flower bouquets of different sizes using a ratio of 2 baby's breath stems for every 3 roses used. Which **TWO** tables show the relationship between the number of roses used and the number of baby's breath stems?

☐ **A.**

Number of Baby's Breath Stems	Number of Roses
4	6
6	8
8	10
10	12

☐ **B.**

Number of Baby's Breath Stems	Number of Roses
4	6
7	9
10	12
13	15

☐ **C.**

Number of Baby's Breath Stems	Number of Roses
6	4
9	6
12	8
18	12

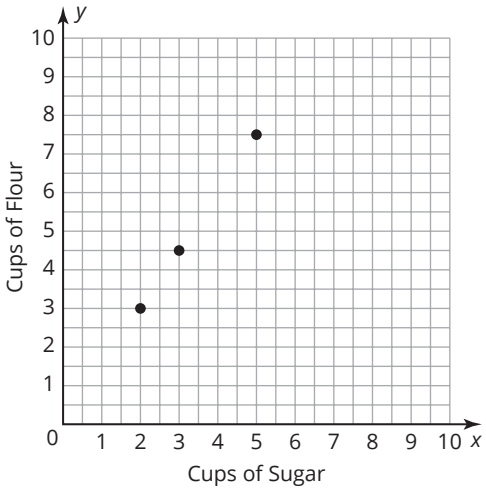
☐ **D.**

Number of Baby's Breath Stems	Number of Roses
4	6
8	12
12	18
16	24

☐ **E.**

Number of Baby's Breath Stems	Number of Roses
10	15
18	27
24	36
28	42

2. The graph represents the number of cups of flour used for the number of cups of sugar in a cake recipe. What is the unit rate for the cups of flour to the cups of sugar?



☐ **F.** 3 cups of flour : 2 cups of sugar

☐ **G.** $4\frac{1}{2}$ cups of flour : 3 cups of sugar

☐ **H.** 3 cups of flour : 1 cup of sugar

☐ **J.** $1\frac{1}{2}$ cups of flour : 1 cup of sugar

3. Carlos can swim 5 laps of the school pool in 3 minutes, Parker can swim 6 laps in 4 minutes, and Avery can swim 4 laps in 2 minutes. Who is the fastest swimmer?

☐ **A.** Carlos

☐ **B.** Parker

☐ **C.** Avery

☐ **D.** They all swim at the same speed.

4. Camilla jogs 12.5 miles in 2.5 hours. At that rate, how many miles can she jog in 1 hour?

☐ **F.** 5 miles in 1 hour

☐ **G.** 4 miles in 1 hour

☐ **H.** 5.5 miles in 1 hour

☐ **J.** $8\frac{1}{3}$ miles in 1 hour

5. Use the conversion factor from cups to quarts to complete the table.

Quarts	2	4		9		$\frac{1}{2}$	
Cups	8		12		3		10

6. A school bus weighs 12 tons 250 pounds. How much does the school bus weigh in ounces? Show your work.

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7. A grocery store sells three sizes of bags of one brand of potato chips. The big bag is 14 ounces and costs $6.30. The medium bag is 9.75 ounces and costs $2.50. The small bag is 8 ounces and costs $2.48.

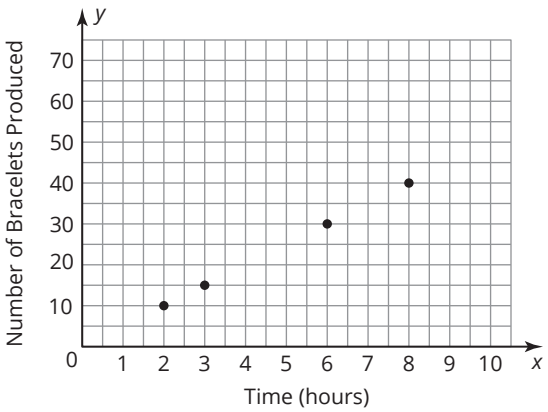
   What is the cost per ounce for each bag size? Which size is the best buy? Explain your reasoning.

8. Logan types 1500 words in 20 minutes. Sarah types 1230 words in 15 minutes. Who can type more words in 60 minutes?

9. Emily lives 2.5 miles from school and Diego lives 3000 yards from school.

   Convert the distances for each person to feet.

10. The graph represents the relationship between the number of bracelets produced and time in hours. What is the unit rate for the number of bracelets produced every hour?



Grade 6 Customary and Metric Conversion Chart

Length

Customary	Metric
1 mile (mi) = 1,760 yards (yd)	1 kilometer (km) = 1,000 meters (m)
1 yard (yd) = 3 feet (ft)	1 meter (m) = 100 centimeters (cm)
1 foot (ft) = 12 inches (in.)	1 centimeter (cm) = 10 millimeters (mm)

Volume and Capacity

Customary	Metric
1 gallon (gal) = 4 quarts (qt)	1 liter (L) = 1,000 milliliters (mL)
1 quart (qt) = 2 pints (pt)	
1 pint (pt) = 2 cups (c)	
1 cup (c) = 8 fluid ounces (fl oz)	

Weight and Mass

Weight	Mass
1 ton (T) = 2,000 pounds (lb)	1 kilogram (kg) = 1,000 grams (g)
1 pound (lb) = 16 ounces (oz)	1 gram (g) = 1,000 milligrams (mg)

GRADE 6

MODULE
3

Moving Beyond Positive Quantities

CC BY NC

Name _____ Date _____

1. Which number has the least value?

☐ **A.** $|-15.869|$

☐ **B.** $-14\frac{6}{7}$

☐ **C.** -9.21

☐ **D.** $|-10\frac{1}{4}|$

2. The local farming club is raising sheep. The healthy weight range for sheep is 120–150 pounds. The table shows the number of pounds the sheep are over or under the healthy weight range.

   Which list shows the sheep in order from closest to farthest from the healthy weight range?

Sheep	A	B	C	D	E
Difference from Healthy Weight Range	6.5	− 3.2	0	$5\frac{3}{4}$	$-1\frac{1}{2}$

☐ **F.** Sheep A, Sheep D, Sheep B, Sheep E, Sheep C

☐ **G.** Sheep B, Sheep E, Sheep C, Sheep D, Sheep A

☐ **H.** Sheep A, Sheep D, Sheep C, Sheep E, Sheep B

☐ **J.** Sheep C, Sheep E, Sheep B, Sheep D, Sheep A

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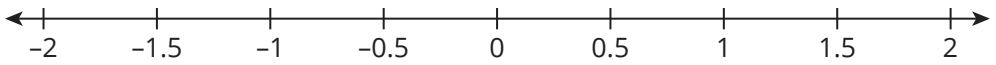
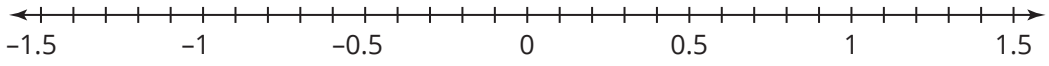
3. Plot a point on the number line to represent the value of $|-2|$.



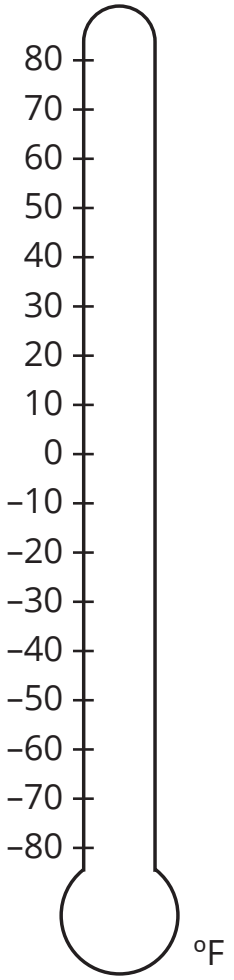
4. Plot each rational number on the number line.

$-1.3,\ 1\frac{2}{5},\ 0.9,\ -\frac{7}{10}$



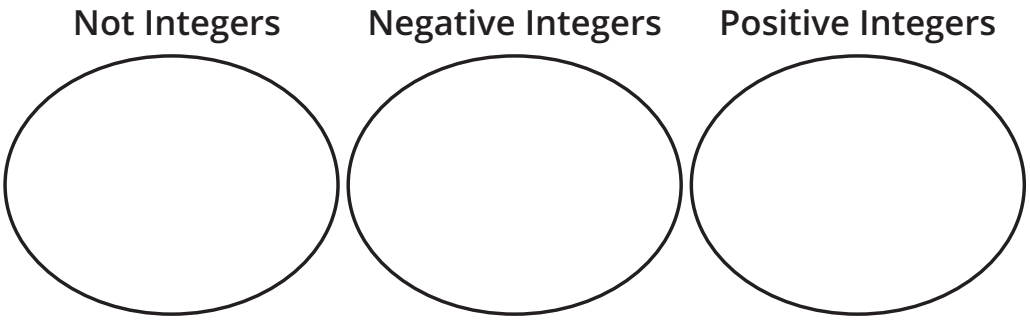
5. Plot each temperature on the thermometer.

   35°F, −15°F, 0°F, −60°F



6. Sort the following numbers into the appropriate set.

   $-12, -2.4, \frac{5}{8}, 1, 52, 3\frac{1}{2}, 8, -4.92$

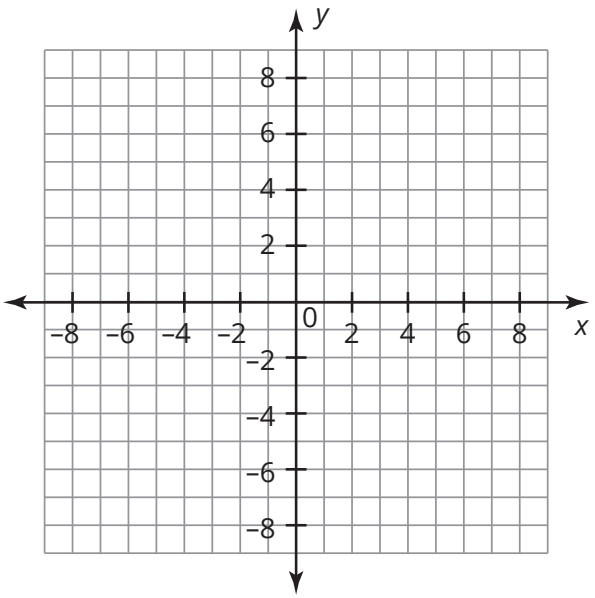


7. Name the quadrant in the coordinate grid where each point is located.

   Select the correct answer in each row.

Point	Quadrant I	Quadrant II	Quadrant III	Quadrant IV
$(3, -9.5)$	☐	☐	☐	☐
$\left(15, \frac{11}{3}\right)$	☐	☐	☐	☐
$(-6, -8)$	☐	☐	☐	☐

Use the coordinate plane for Questions 8 and 9.



8. Plot the point $A(-4.5, -6)$ on the coordinate plane.

9. Plot the point B in Quadrant IV that is 5 units away from point $A(-4.5, -6)$. Give the ordered pair for point B.

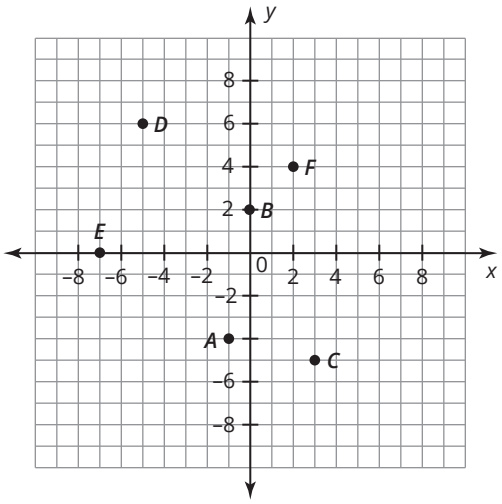
10. Five students are playing a game where they can spend and earn points. Point values are represented as positive and negative numbers. The scores for Round 1 are shown in the table.

Student	1	2	3	4	5
Score	$-1\frac{3}{4}$	$-2\frac{1}{8}$	-1.10	$2\frac{1}{4}$	$-2\frac{1}{5}$

Which student had the lowest score? Explain your reasoning.

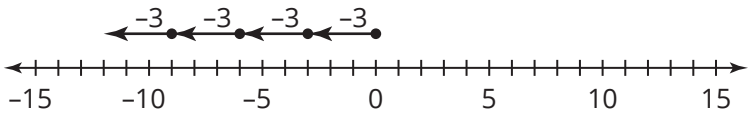
11. Consider the points labeled from *A* to *F* on the coordinate plane shown.

What is the *y*-coordinate of point *C*?



Name _____ Date _____

1. Which expressions are represented on the number line?
Select **TWO** correct expressions.



☐ **A.** $-3 \cdot 4$

☐ **B.** $-4(-3)$

☐ **C.** $(-3) + (-3) + (-3) + (-3)$

☐ **D.** $(-4) + (-4) + (-4)$

☐ **E.** $4(-3) - (-4)(-3)$

2. The expression shown can be used to show the value of an investment.
$5(-3) + 24 + (-12)$

What is the value of this expression?

☐ **F.** -3

☐ **G.** 51

☐ **H.** 21

☐ **J.** 27

3. Which equation is **NOT** true?

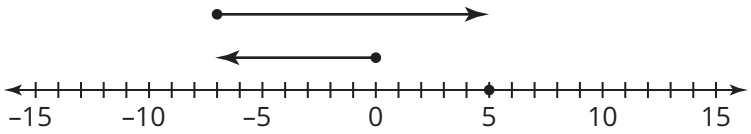
☐ **A.** $-26 - (-50) = 24$

☐ **B.** $-18 - (-34) = -52$

☐ **C.** $15 - (-9) = 24$

☐ **D.** $-31 - 24 = -55$

4. Which sum or difference is modeled on the number line?



☐ **F.** $5 + (-12) = 7$

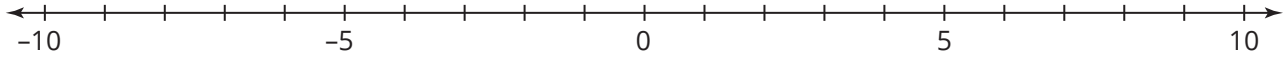
☐ **G.** $-7 + 12 = 5$

☐ **H.** $5 - (-12) = -7$

☐ **J.** $-7 + (-12) = 5$

5. Write an equation that can be used to determine the final location by connecting the movements indicated in the table.

Starting Position	Steps Backward	Steps Forward	Equation
−1	7	3	



6. William is playing a game that involves rolling a black numbered cube and a red numbered cube. The result of a red number cube represents a negative number, and the result of a black number cube represents a positive number. William's current score is 4. Then, William rolls a red 5 and a black 3.

   Write an equation to represent William's new score.

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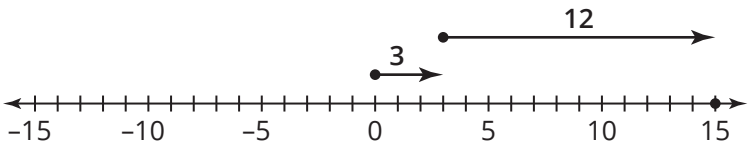
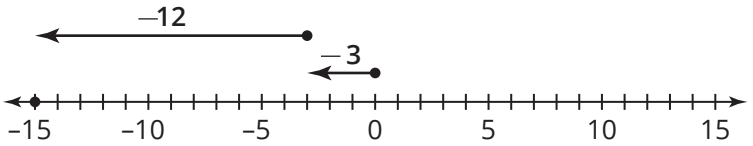
7. Which number line represents the expression?

$3 + (-12)$

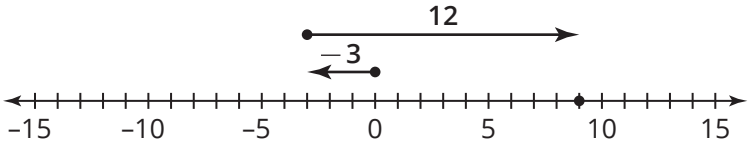
☐ **A.**



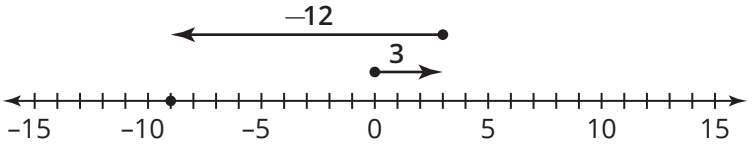
☐ **B.**



☐ **C.**



☐ **D.**

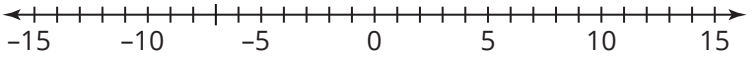


8. Write the value of the expression.

$-8 \cdot 5 - (-9)$

9. Use the number line to represent the expression and determine the unknown integer.

$-7 + \_\_\_\_\_ = 3$



10. The table gives the lowest temperatures ever recorded in five U.S. cities. Use this table to answer the question.

Lowest Recorded Temperatures (°F)				
Juneau, AK	El Paso, TX	Miami, FL	Chicago, IL	San Diego, CA
−22	−8	27	−27	25

What is the difference between the temperatures listed for Miami and Juneau? Explain your reasoning.

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GRADE 6

MODULE
4

Determining Unknown Quantities

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End of Topic Assessment

Name _____ Date _____

1. The given expression can be used to calculate the number of points needed to set a new record in a video game where 100 points is the top score.
   $100 - (16 + 12 - 4(5) + 7(3) + 8)$
   How many points are needed to set the new record?

☐ **A.** -49

☐ **B.** 63

☐ **C.** 45

☐ **D.** 23

2. Mrs. Hernandez wrote this expression on the board.
   $(-8)(3) + (6 \cdot 5)$
   What is the value of her expression?

☐ **F.** 24

☐ **G.** -30

☐ **H.** 6

☐ **J.** -54

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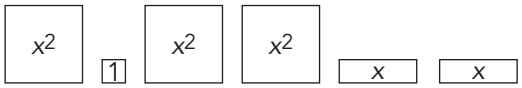
3. Ashley wrote an expression that is equivalent to $(35 + 13) \div 8$. Which expression could be the one that Ashley wrote?

- ☐ **A.** $48 + (-2)(-4)$
- ☐ **B.** $(3 \cdot 3 \cdot 4) + (3 \cdot 4) - (10 \cdot 4)$
- ☐ **C.** $(5 + 6) + (6 \cdot 2) - (5 \cdot 4)$
- ☐ **D.** $(3 \cdot 2 \cdot 4) \div (1 \cdot 4)$

4. Which expression does **NOT** represent the model?



- ☐ **F.** $x^2 + 1 + x^2 + x^2 + x + x$
- ☐ **G.** $x^2 + 1 + 2x^2 + 2x$
- ☐ **H.** $5x^2 + 1$
- ☐ **J.** $3x^2 + 2x + 1$

5. Jamal wrote the expression $7(n + 4) + 8$ to show the amount of money 7 friends paid for programs at a play. Which expressions are equivalent to the one Jamal wrote? Select **TWO** correct answers.

- ☐ **A.** $7 + n + 7 + 4 + 8$
- ☐ **B.** $7 \cdot n + 7 \cdot 4 \cdot 8$
- ☐ **C.** $7 \cdot n + 7 + 4 + 8$
- ☐ **D.** $7 \cdot n + 7 \cdot 4 + 8$
- ☐ **E.** $7 \cdot n + 36$

6. What is the prime factorization of 126?

7. Write an algebraic expression or equation to represent the following statement.

   Seven times a number, p, subtracted from 250

8. Fill in the blanks to create equivalent expressions. List the property or operation applied at each step. A word bank is provided.

given	associative property
combine like terms	inverse property
distributive property	identity property
commutative property	

$3x + (32 + 5x) - 25$ given

$3x + (5x + 32) - 25$ _____

$(3x + 5x) + (32 - 25)$ _____

_____ combine like terms

9. Students were asked by their teacher to write an expression that is equivalent to $4x + 9$. The teacher received the response shown. Use and draw algebra tiles to determine whether the response is correct or incorrect. In the case that the response is incorrect, describe the error made in rewriting the expression.

   Key: $\square = 1$ $\blacksquare = -1$ $\square\!\!\square = x$ $\blacksquare\!\!\blacksquare = -x$

   $2(2x + 3) + 3$

10. What is the value of the expression shown? Explain your reasoning.

    $16 \div 8 - 1 \cdot 7^2$

Name _____ Date _____

1. Which situations can be represented by the equation $x + 14 = 25$? Select **TWO** correct answers.

☐ **A.** Alyssa needs to earn more than 25 points to get an A in math. She has 14 points already. How many more points does she need to earn more than 25 points?

☐ **B.** There are 25 students in band. There are 14 students in choir. How many students are in band and choir in all?

☐ **C.** Alejandro bought new gloves and a hat for $25. The gloves cost $14. What is the cost of the hat?

☐ **D.** Eduardo is reading a book. For 14 days, Eduardo reads 25 pages per day. How many pages does Eduardo read in all?

☐ **E.** Chris has a goal of selling 25 pizza kits for a fundraiser. He has already sold 14. How many more pizza kits does he need to sell to meet his goal?

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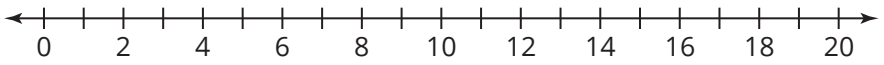
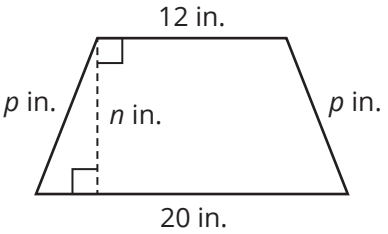
2. Graph the solution set to the inequality $4x \geq 52$.



3. A painting is shaped like a trapezoid and has an area of A square inches. The dimensions of the painting are shown in the diagram.



Which equation can be used to determine A, the area of the painting, in square inches?

☐ **F.** $A = 20n$

☐ **G.** $A = \frac{1}{2}(12 + 20)n$

☐ **H.** $A = \frac{1}{2}(12 + 20)p$

☐ **J.** $A = 12 + 20 + 2p$

4. Jorge has a goal of saving $50 for a concert ticket. He saves $5 per week. Which inequality can Jorge use to determine t, the number of weeks Jorge should save to meet or exceed his goal?

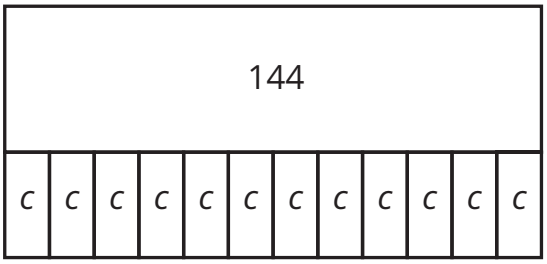
☐ **A.** $5t \geq 50$

☐ **B.** $5t \leq 50$

☐ **C.** $t + 5 \geq 50$

☐ **D.** $t + 5 \leq 50$

5. Jaylen bought a streaming service subscription for a year. He paid $144. Jaylen wanted to determine the cost, c, of the service per month. He created a model to help determine the price.



What was the cost of the streaming service each month?

☐ **F.** $6

☐ **G.** $12

☐ **H.** $16

☐ **J.** $18

6. Mariana said the value of $x = 18\frac{1}{2}$ makes the equation shown true. Verify this value is a solution.
$\frac{1}{6}x = 3\frac{1}{12}$

Use the information shown to answer Questions 7 and 8. The cost of entry to a carnival is $12.50 plus the cost of rides. Martha goes to the carnival and spends $52.50.

7. Write an equation to represent the relationship between the total spent, *m*, and the amount spent on rides, *n*.

8. Use your equation to calculate the amount spent on rides if the total spent was $52.50.

9. Consider the inequality shown.

   $\frac{x}{2} \leq 10$

   Determine the solution set for the given inequality.

10. Ashley needs to spend no more than $40 on her school supplies. She spends $12 on a new calculator and wants to buy additional school supplies.

    Determine the solution set that represents all the possible values for *a*, the amount of money Ashley spent on additional school supplies. Explain your reasoning.

11. Which equations are equivalent to the equation $4x = 20$? Select **TWO** correct equations.

- ☐ **A.** $5(4x) = 20$
- ☐ **B.** $1(4x) = 20(1)$
- ☐ **C.** $\frac{4x}{2} = 20$
- ☐ **D.** $\frac{4x}{4} = \frac{20}{4}$
- ☐ **E.** $2(2x) = 2(20)$

Name _____ Date _____

1. Kaya works in an ice cream shop. The table shows the number of hours she worked during each of the past four weeks and the amount she earned each week.

Time Worked (hours)	Amount Earned (dollars)
10	120.00
12	144.00
14	168.00
16	192.00

Let t represent the time in hours and let a represent the amount earned in dollars. Which equation represents the relationship between a and t?

☐ **A.** $a = t + 110$

☐ **B.** $a = 12t$

☐ **C.** $a = \frac{t}{12}$

☐ **D.** $a = \frac{12}{t}$

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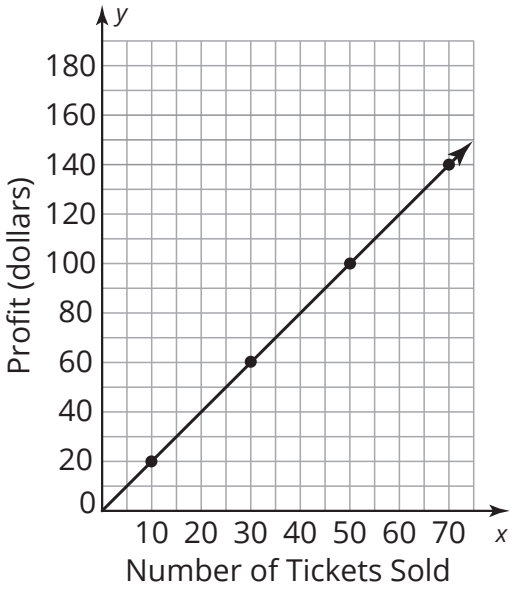
2. The graph shows the profit, y, from the sale of raffle tickets given x number of tickets.



Which equation best represents the relationship between x and y?

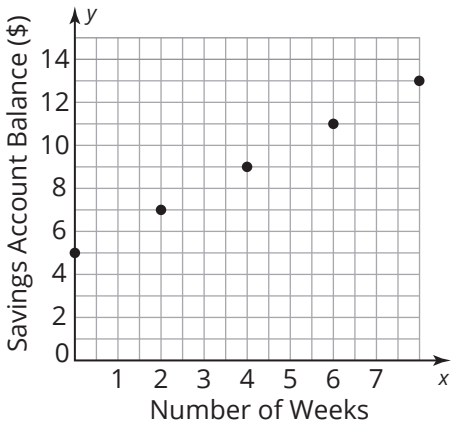
☐ **F.** $y = x + 30$

☐ **G.** $y = x + 10$

☐ **H.** $y = 20x$

☐ **J.** $y = 2x$

3. The graph shows the amount of money Chris has in his savings account each week.



Which list best represents the dependent quantities in the graph?

☐ **A.** 6, 8, 10, 12, 14

☐ **B.** 5, 7, 9, 11, 13

☐ **C.** 0, 2, 4, 6, 8

☐ **D.** 1, 3, 5, 7, 9

4. A piano teacher charges $150 for 3 hours of work. She charges the same amount of money for each hour of work. Which table shows the relationship between the amount of time the piano teacher works and the amount of money she charges?

☐ F.

Piano Teacher's Charges	
Amount of Time Worked (hours)	**Amount Charged (dollars)**
1	$50
5	$250
9	$450
13	$650

☐ G.

Piano Teacher's Charges	
Amount of Time Worked (hours)	**Amount Charged (dollars)**
10	$400
20	$800
30	$1200
40	$1600

☐ H.

Piano Teacher's Charges	
Amount of Time Worked (hours)	**Amount Charged (dollars)**
2	$140
4	$280
6	$420
8	$560

☐ J.

Piano Teacher's Charges	
Amount of Time Worked (hours)	**Amount Charged (dollars)**
13	$390
15	$450
17	$510
19	$570

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5. The table shows the tablespoons of sugar needed for a recipe based on the servings being cooked.

Number of Servings	Number of Tablespoons
12	3
16	4
20	5
24	6

List the independent quantities from the table. Explain your reasoning.

6. A water pump has a rate of flow of 110 gallons per hour.
Write an equation to model the relationship between the amount of water pumped and the time in hours.

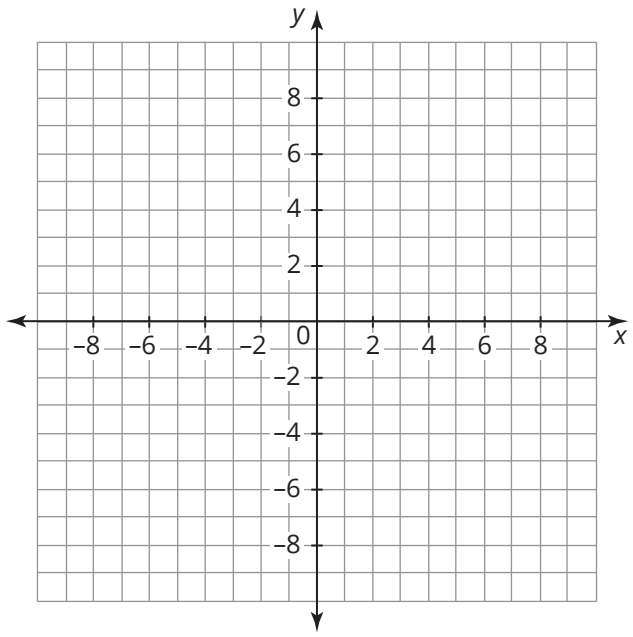
7. Alyssa makes personalized ornaments. She charges each customer the cost of the ornament plus a fee for the personalization.

Cost of Ornament (dollars)	Total Cost after Personalization (dollars)
5.75	11.70
7.25	13.20
10.50	16.45
12.75	18.70
15.25	21.20
18.50	24.45

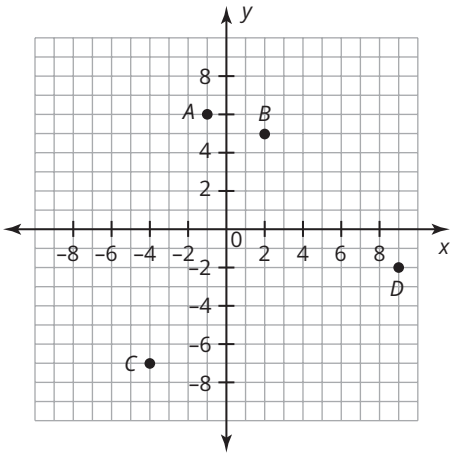
Define variables and write an equation to represent the relationship between the quantities in the table.

8. Plot and label each point on the coordinate plane

Point	x	y
A	8	3
B	−3.5	2
C	0	5
D	−5	−1
E	2	−3.5
F	−1	0
G	−7.5	−6.5



9. The coordinate grid below shows points *A*, *B*, *C*, and *D*. All the coordinates for these points are integers.
What is the *x*-value of point *C*?



10. Point *W* is located on the coordinate grid at $\left(-2\frac{3}{4}, 5\frac{1}{6}\right)$. In which quadrant is point *W* located?

11. Jaylen is organizing his closet. He notices that for every pair of shorts, he has 3 pairs of pants. Which of the following are accurate based on this situation? Select all that apply.

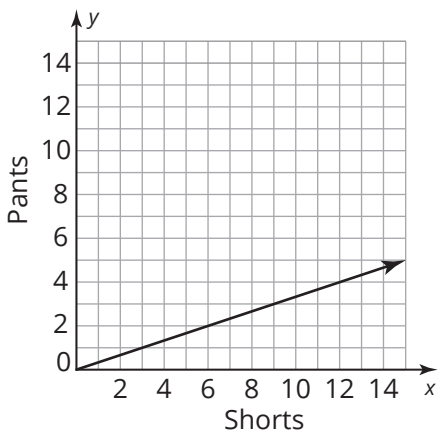
☐ **A.**

Shorts	Pants
2	5
5	8
9	12
14	17

☐ **B.** Jaylen could have 1, 4, 7, 10, 13, or 16 pairs of pants.

☐ **C.** $\frac{2 \text{ pairs of shorts}}{6 \text{ pairs of pants}} = \frac{9 \text{ pairs of shorts}}{27 \text{ pairs of pants}}$

☐ **D.**



☐ **E.** Jaylen could have 9, 15, 21, 30, or 72 pairs of pants.

End of Topic Assessment

Name _____ Date _____

1. Which statement applies only to a debit card?

- ☐ **A.** Rewards are often offered for their use
- ☐ **B.** Security is protected by a customer's signature
- ☐ **C.** Funds are taken directly from a checking account
- ☐ **D.** Customers must be approved to be issued a card

2. Kaya was accepted into Texas A&M University and was awarded $10,000 per year from the government to help offset her tuition costs. Kaya is not required to repay the money. Which term describes the money Kaya was awarded?

- ☐ **F.** Grant
- ☐ **G.** Savings plan
- ☐ **H.** Student loan
- ☐ **J.** Work-study program

3. Alejandro is applying for a car loan. Which item best ensures that Alejandro will receive the lowest interest rate for the car loan?

- ☐ **A.** A good credit score
- ☐ **B.** A post graduate degree
- ☐ **C.** A proof of renter's insurance
- ☐ **D.** A high mortgage amount on his home

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4. The table shows the average annual salary for four jobs.

Average Annual Salaries	
Job	Average Annual Salary (dollars)
Automotive technician	$45,150
Carpet installer	$46,680
Health technician	$47,540
Tax preparer	$49,550

Based on this information, how much more will a health technician make than an automotive technician over 15 years?

☐ **F.** $2390

☐ **G.** $713,100

☐ **H.** $35,850

☐ **J.** $677,250

5. Which items are included in a credit report? Choose THREE correct answers.

- ☐ **A.** Auto loans
- ☐ **B.** Checking account information
- ☐ **C.** Current address
- ☐ **D.** Marital status
- ☐ **E.** Student loans

6. Eduardo is applying for both a credit card and a debit card. Which type of card will be affected by a positive credit history? Explain your reasoning.

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Use the information given to answer Items 7 and 8.

Trung is looking to open a new checking account. She has $1500 to deposit into an account. She investigates and finds the two banks shown. She plans to deposit her money into an account and keep it there for at least one year.

New Choice Bank	**Best Quality Bank**
2.5% APY	4% APY
$5.00/month fees	$3.00/month fees
$500 minimum balance (additional fees assessed for lower balances)	$1000 minimum balance (additional fees assessed for lower balances)

7. Determine the amount of money Trung would have after one year at New Choice Bank and one year at Best Quality Bank.

8. Which bank would you suggest Trung **NOT** use? Explain your reasoning.

9. Chris is purchasing a new stove for $974.20. Chris charges the stove to his credit card. Making monthly payments of $50, it takes him 2 years to pay the stove off. How much money would Chris have saved if he had used his debit card to make the purchase instead?

10. Samantha's checkbook register is shown. She checks her balance with the bank on June 15th and finds that her bank balance matches the register.

Check	Date	Transaction Description	Payment/ Withdrawal	Deposit	Balance
	Jun 15				$2750.75
	Jun 16	Direct Deposit		$421.50	
112	Jun 20	Car Payment	$231.50		
	Jun 21	ATM withdrawal	$75.00		
	Jun 23	Pet Shop	$38.21		
	Jun 25	Transfer to Savings	$500.00		
	Jun 30	Direct Deposit		$421.50	

Determine the balance, in dollars and cents, in Samantha's account on June 30th.

GRADE 6

MODULE 5

Describing Variability of Quantities

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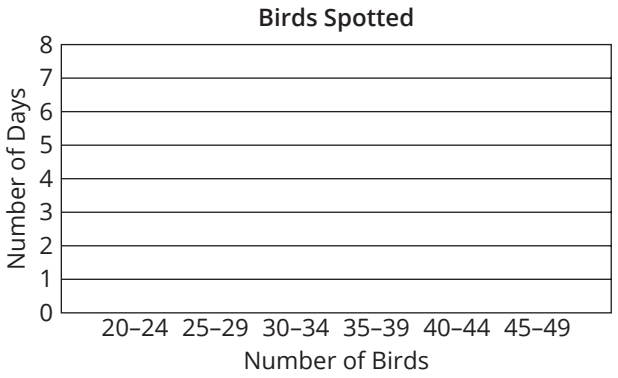
Name _____ Date _____

1. The table shows the number of birds spotted by a bird watcher at a local park on each of 25 days.

Birds Spotted												
25	44	43	33	42	40	29	31	46	37	48	30	36
48	37	41	26	39	22	44	28	33	47	40	45	

Complete the histogram to represent the number of birds spotted.



2. An animal sanctuary cares for the animals shown in the frequency table below.

Animal Sanctuary Inhabitants	
Animal	Number of Animals
Wolves	14
Bears	10
Ostriches	13
Tigers	5
Lions	8

In which table do the percentages represent the relative frequency of the number of animals at the sanctuary?

☐ A.

Animal Sanctuary Inhabitants	
Animal	Number of Animals
Wolves	14%
Bears	10%
Ostriches	13%
Tigers	5%
Lions	8%

☐ B.

Animal Sanctuary Inhabitants	
Animal	Number of Animals
Wolves	28%
Bears	20%
Ostriches	26%
Tigers	10%
Lions	16%

☐ C.

Animal Sanctuary Inhabitants	
Animal	Number of Animals
Wolves	32%
Bears	21%
Ostriches	27%
Tigers	8%
Lions	12%

☐ D.

Animal Sanctuary Inhabitants	
Animal	Number of Animals
Wolves	56%
Bears	40%
Ostriches	52%
Tigers	10%
Lions	16%

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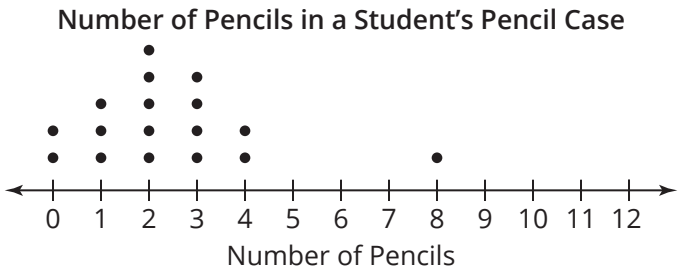
3. The dot plot shows the number of pencils 17 students have in their pencil cases.



Which statement is supported by the data in the dot plot?

☐ **F.** Fewer than half of the students have less than 3 pencils in their cases.

☐ **G.** More students have 8 pencils in their cases than have 0 pencils in their cases.

☐ **H.** Fewer students have 1 pencil in their cases than have 4 pencils in their cases.

☐ **J.** More than half of the students have 2 or 3 pencils in their cases.

4. Which question will yield data with variability?

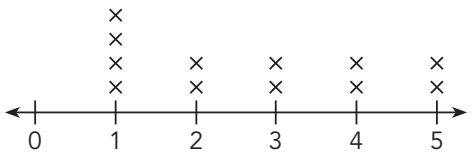
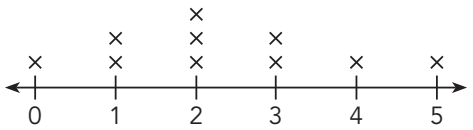
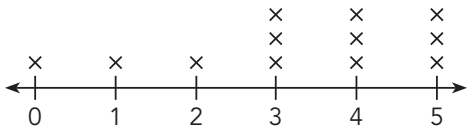
☐ **A.** What are the heights of the students in the cafeteria?

☐ **B.** How many students were present in your class yesterday?

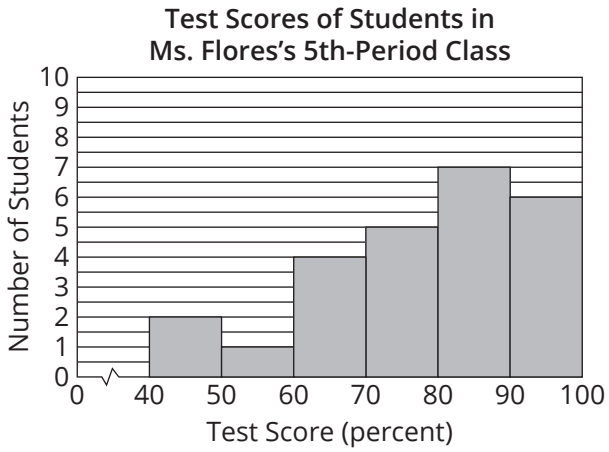
☐ **C.** How many days did it rain last month in Seattle, Washington?

☐ **D.** How tall is the tallest building in the world?

5. Consider each dot plot. Select the correct description in each dot row.

Dot Plot	The data is symmetric.	The data are clustered from 3 to 5.	The data has a peak at 1.
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐

6. The histogram shows the scores of the students in Ms. Flores's 5th-period math class on their last test.



Which statements are supported by the data displayed in the histogram? Select **TWO** correct answers.

☐ **F.** Twice as many students scored between 60 and 69 percent than between 40 and 49 percent.

☐ **G.** Ms. Flores has 30 students in her 5th-period class.

☐ **H.** Twenty percent of the students scored between 70 and 79 percent.

☐ **J.** Less than five percent of the class scored between 40 and 49 percent.

☐ **K.** More than half of the class scored greater than eighty percent.

7. The table shows the number of silver medals won by 10 countries in the 2020 Summer Olympics in Tokyo, Japan.

Country	Silver Medals
United States	41
China	32
Russia	28
Great Britain	20
Japan	14
France	12
Germany	11
Italy	10
Australia	7
South Korea	4

Create a stem-and-leaf plot of the data set. Include a title and provide a key for your plot.

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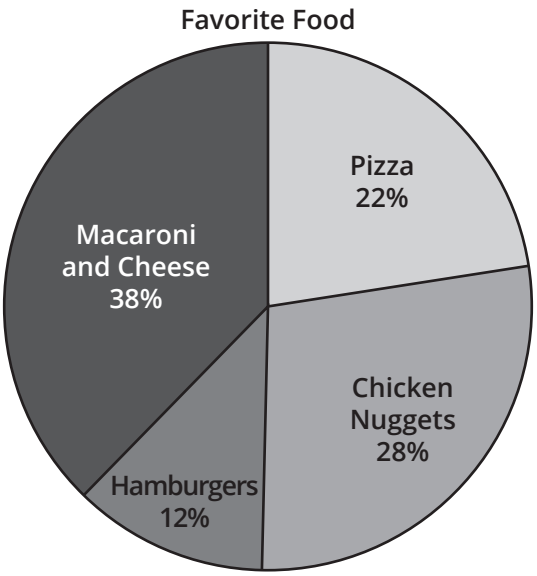
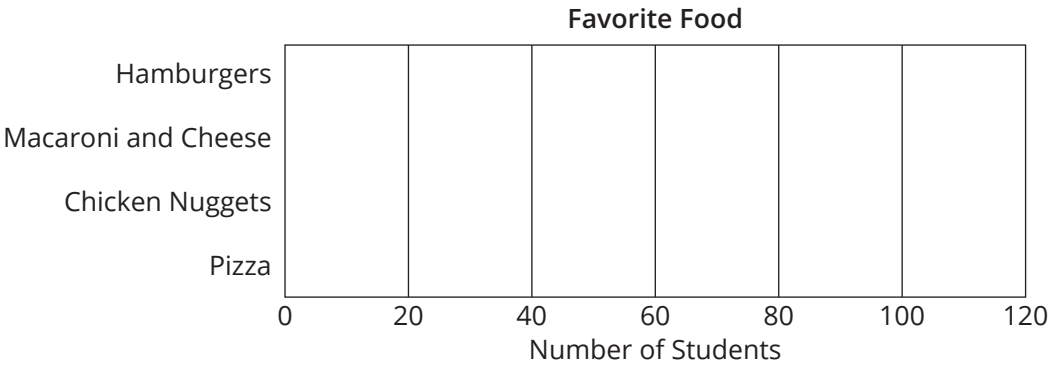
8. Ricardo was interested in the favorite school cafeteria food of students in sixth grade. He surveyed 300 sixth-graders and displayed his data in the circle graph below.



Create a bar graph to display the information, in terms of the frequency, of each type of food. What conclusions can you make about the most popular school cafeteria food among sixth-graders Ricardo surveyed? Use the bar graph to explain your reasoning.



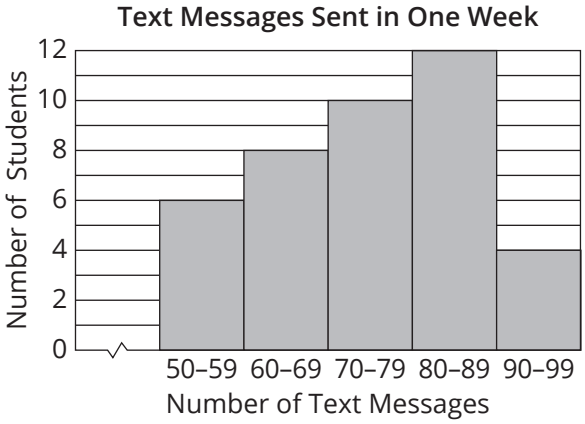
9. The stem-and-leaf plot shows textbook prices at a bookstore. How many textbooks at the bookstore cost less than $42.00?

Book Prices (dollars)

2	1 1 2
3	5 5 6 7
4	2 2 2 2 4 6 9
5	2 3 8
6	4 8
7	2 5

Key: 2 | 1 = $21

10. The histogram shows the number of text messages a class of 6th-grade students sent during one week. How many students sent 80 or more text messages in one week?



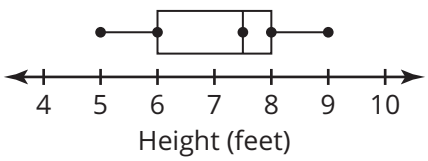
Name _____ Date _____

1. The list shows the heights in feet of 12 tomato plants in a community garden.

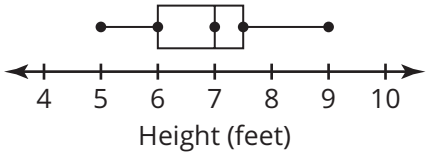
   5, 6, 6, 6, 7, 7, 7, 7, 8, 8, 8, 9

   Which box plot best displays a summary of the data?

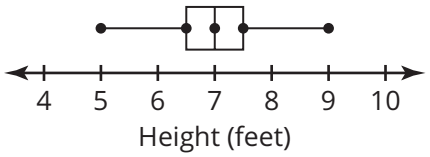
☐ **A.**



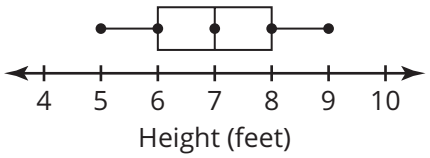
☐ **B.**



☐ **C.**



☐ **D.**



2. The stem-and-leaf plot shows the number of words that were typed in 1 minute by sixth-graders.

Words Typed per Minute by Sixth-Graders

Stem	Leaf
5	1 2 2 6 7 8
6	2 3 4 4 5 9
7	0 2 5
8	3 5
9	0

Key: 5 | 1 = 51 words

Which statement is best supported by the data in the stem-and-leaf plot?

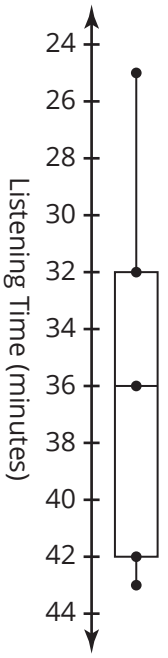
☐ **F.** More than one-half of the students typed at least 64 words per minute.

☐ **G.** Three students typed 70 words per minute.

☐ **H.** Seven students typed fewer than 60 words per minute.

☐ **J.** One-half of the students typed between 50 and 63 words per minute.

3. Miguel records the number of minutes he listens to music each day for 2 weeks. The box plot shows the summary of the results.



Which statement does **NOT** describe the data represented in the box plot?

☐ **A.** The median number of minutes Miguel spent listening to music each day is 36.

☐ **B.** The range of minutes Miguel spent listening to music each day is exactly two times the amount of the interquartile range of minutes.

☐ **C.** The interquartile range of the data recorded by Miguel is 10.

☐ **D.** Miguel did not spend more than 43 minutes listening to music any day during the two weeks.

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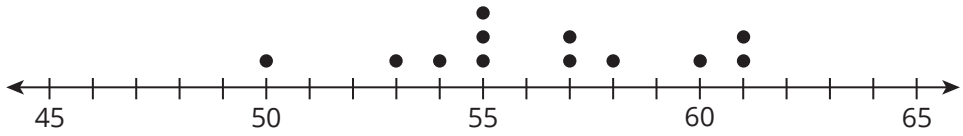
4. The dot plot shown displays the heights, in inches, of 12 volleyball players.



Determine the median and mean values for the data in the dot plot.

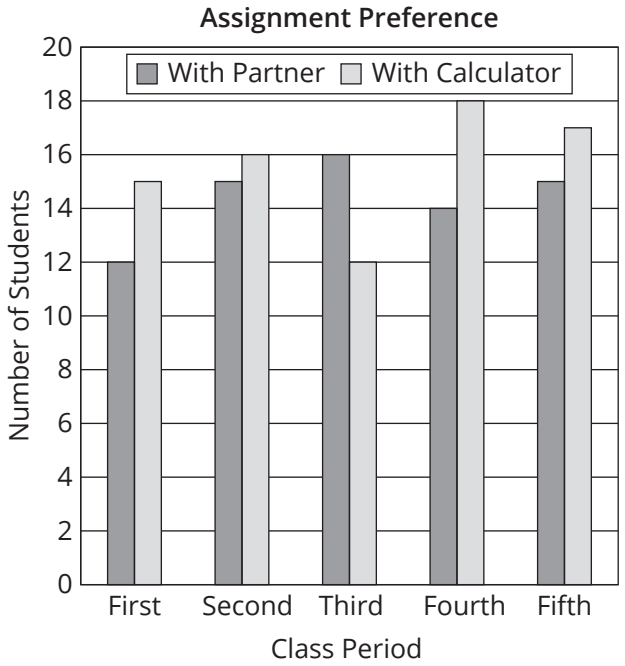
5. Xavier wants to estimate the number of points each player earns while playing a math computer game. He decided to take a random sample of 15 anonymous players. The points data are shown.

2, 7, 5, 3, 6, 10, 0, 21, 11, 9, 4, 8, 12, 6, 3

Determine the five-number summary for the data from the sample.

Use the information shown to answer Items 6 and 7.

Ms. Brown gave students in 5 different class periods the option of completing an assignment with a partner or with a calculator. The results of the survey are shown in the bar graph below.



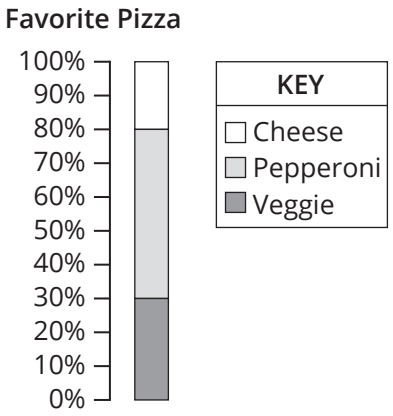
6. What percentage of Ms. Brown's total students chose to work with a calculator?

7. How many of Ms. Brown's students in third and fifth periods chose to work with a partner? Explain your reasoning.

8. Hailey wants to estimate the number of minutes students spend waiting for the bus each morning. She decides to take a random sample of 12 anonymous students. The results are shown below. Determine the mean of the data set.

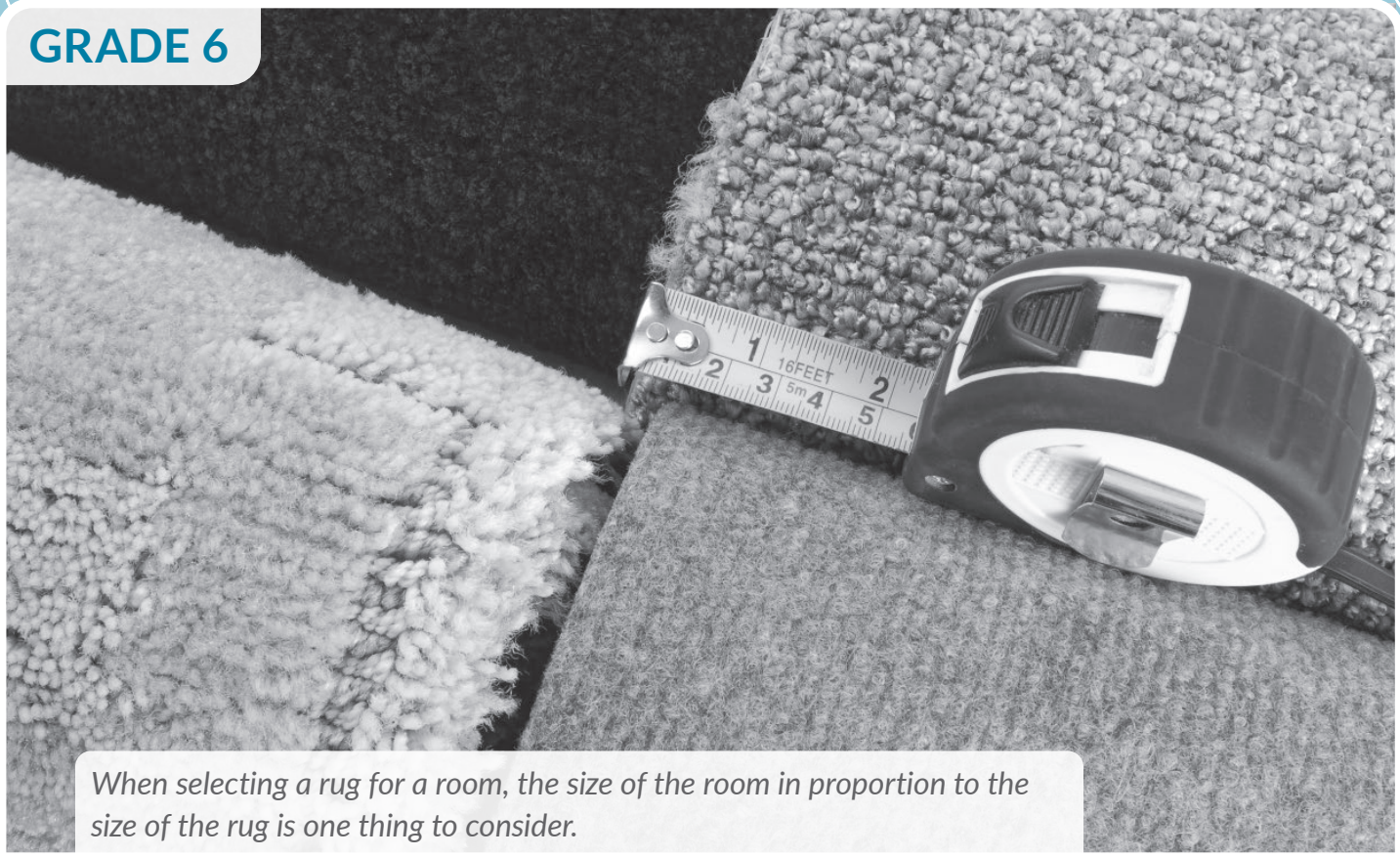
4 minutes	10 minutes	8 minutes	12 minutes
3 minutes	15 minutes	6 minutes	10 minutes
5 minutes	22 minutes	13 minutes	18 minutes

9. Students in Grades 6 through 12 were surveyed to determine their favorite type of pizza. The results are shown in the percent bar graph. Use the percent bar graph to complete the table.



Favorite Pizza	Percent of Students	Number of Students
Pepperoni		80
	30	

GRADE 6



When selecting a rug for a room, the size of the room in proportion to the size of the rug is one thing to consider.

Performance Tasks

1 Performance Task

Equivalent Ratios

Isabella is buying a rectangular rug to decorate her rectangular living room. She wants the width : length ratio of the rug and floor to be the same. The width of the living room floor is 15 ft, and the length is 20 ft. The available rug sizes are shown in the table.

- Isabella eliminated the rug(s) that are a square or closest to a square. Which rug(s) did she eliminate right away?
- Which rug(s) might Isabella buy so that the ratios of the rug and the floor are the same?
- Create a graph and a double number line to support your answer.
- Suppose area rugs are sold at a cost of per square foot. Compare the costs of the two new rugs with the same width : length ratio. Which rug should Isabella purchase?

Rug	Width (ft)	Length (ft)
1	4	6
2	5	7
3	6	9
4	8	10
5	9	12
6	10	10
7	10	14
8	11	17
9	12	16

Your work should include:

- A graph showing width : length ratio. (3 points)
- A double number line showing width: length ratio. (3 points)
- An explanation using math terms of how you determined your answers. (3 points)
- Your calculations. (3 points)
- The rugs with the same ratio as the floor. (2 points)

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Rubric: 14 Total Points

	0 points	1 point	2 points	3 points
Graph	No graph is shown.	The graph is incomplete or incorrect.	The graph has minor errors.	The graph is complete and correct.
Double Number Line	No double number line is shown.	The double number line is incomplete or incorrect.	The double number line has minor errors.	The double number line is complete and correct.
Explanation	No explanation is given.	Explanation given uses no math terms.	Explanation corresponding to one of the answers is complete and includes math term(s).	Explanation corresponding to all questions is complete and includes math term(s).
Calculations	No calculations are shown.	Calculations are shown but include significant errors.	Calculations are shown but include minor errors.	Calculations are shown that are complete and correct.
Statement	Rug sizes are not stated or are incorrect.	Only one rug size is stated or correct.	Both correct rug sizes are stated.	N/A

2 Performance Task

Percents

To celebrate the end of the summer, the camp counselors at a local summer camp are throwing a party. They decide they want to order pizza for the 124 campers and 26 camp counselors who will be in attendance. They are trying to determine which pizzas they should order for the party.

All of the campers and camp counselors voted on their preferred pizza. The results are shown.

Type of Pizza	Number of Votes	Percent of Votes
Four Cheese	36	
Buffalo Chicken		8%
Veggie Lovers	24	
Sausage and Peppers	21	
Hawaiian Style		6%
Pepperoni		32%

- Some of the results are shown in the table. Fill in the unknown values to complete the table.
- After all of the votes were collected, some people changed their mind from Four Cheese or Pepperoni to Sausage and Peppers. Now there are 22% of people who voted for Sausage and Peppers. How many people changed their mind?
- One-third of the people who changed their mind previously chose Four Cheese. What is the new percent of votes for Four Cheese? What is the new percent of votes for Pepperoni?
- The campers invited some of their family members to celebrate at the end of summer party. The family members attending voted on their preferred pizza. Now there are 76 votes for Pepperoni, which represents 38% of the total votes. How many family members will be attending the party?

Your work should include:

- A completed table. (3 points)
- Your calculations. (3 points)
- Statement with supporting work for impact of changed votes. (3 points)
- Statement with supporting work for impact of family members. (3 points)

CC BY NC

Rubric: 12 Total Points

	0 points	1 point	2 points	3 points
Completed Table	The table is not complete or correct.	The table is incomplete or incorrect.	The table has minor errors.	The table is complete and correct.
Calculations	No calculations are shown.	Calculations have significant errors.	Calculations have minor errors.	Calculations are complete and correct.
Statement with Supporting Work for Changed Votes	No statement or supporting work is provided.	The statement and supporting work are incomplete or incorrect.	The statement and supporting work have minor errors.	The statement and supporting work are complete and correct.
Statement with Supporting Work for Family Members	No statement or supporting work is provided.	The statement and supporting work are incomplete or incorrect.	The statement and supporting work have minor errors.	The statement and supporting work are complete and correct.

3 Performance Task

Solving Equations

Each winter, the Parent-Teacher Association (PTA) at Ethan's school organizes a ski trip. Students pay an upfront cost, which includes a 2-night stay, transportation, meals, and 6 hours of skiing each day.

Annual Ski Trip!

- 2-night stay
- 6 hours of skiing each day
- Transportation and meals included

- This year, the PTA has 7 chaperones going on the trip and each chaperone will supervise exactly 15 students.
- The PTA collected $25,604.25 from the students to pay for the trip.
- The chaperones reserve their own hotel rooms, but the PTA reserves hotel rooms for the students. Each room can hold 4 students, and no student should be placed in a room alone.
- Students and chaperones take school buses from the school to the ski resort. Each bus seats 48 people.
- Snow tubing is not included in the cost of the trip. The cost is $23.49 for the cost of the lift ticket, or $32.49 for the cost of the lift ticket and specialty snow boots. Three-fifths of the students decide to go snow tubing. The students brought money to pay for the lift ticket, but they did not realize they had to bring money for snow boots. The PTA offers to loan them money, which the students will pay back after the trip.

Use this information to write and solve equations to determine:

- the number of students going on the trip
- the cost per student
- the number of hotel rooms needed for students, including the number of students in each room to ensure that no student is placed in a room alone
- the number of buses needed, including the number of chaperones and students on each bus to distribute the passengers among buses
- the cost to rent snow boots
- the number of students who decide to go snow tubing
- the balance owed to the PTA for the students who rent snow boots

Your work should include:

- Defined variables. (3 points)
- Equations to represent each situation. (3 points)
- An explanation of how each equation represents the situation. (3 points)
- Solved equations. (3 points)
- Statements interpreting solutions. (3 points)

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Rubric: 15 Total Points

	0 points	1 point	2 points	3 points
Variables	No variables are defined.	Not all variables are defined and/or variables are defined incorrectly for some scenarios and equations.	Variables are defined for all scenarios and equations, but with minor errors.	Variables are defined correctly for all scenarios and equations.
Equations	No equations are given.	Equations are incomplete and/or incorrect.	Equations are mostly complete and correct, but with minor errors.	Equations are complete and correct.
Explanation	No explanation is given.	Explanations are incomplete, incorrect, and/or not logical.	Explanations are mostly complete, correct, and/or logical, but with minor errors.	Explanations are complete, correct, and logical.
Solutions	No solutions are given.	Solutions are incomplete and/or incorrect.	Solutions are mostly complete and correct, but with minor errors.	Solutions are complete and correct.
Interpretation of Solutions	No interpretations are given.	Interpretations are given, but with significant errors.	Interpretations are given, but with minor errors.	Interpretations are complete, correct, and logical.

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