THIRD SPACE LEARNING

6th Grade Maryland State Practice Math Test

Maryland Practice Test Grade 6

Grade 6

Questions

Name: ..... Class: .....

Date: ..... Score: .....

1 In a parking lot, there are 13 motorcycles and 28 cars. What is the ratio of cars to total vehicles?

A. 13:28
B. 28:41
C. 28:13
D. 13:41

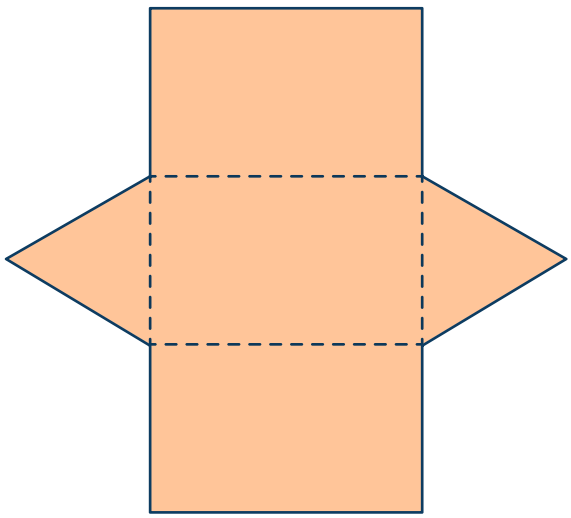
2 What is the value of a?

A. -0.2
B. -0.25
C. -0.1
D. -0.6

3 Which expression is equivalent to $6y + 35$?

A. $6(y + 29)$
B. $5(y + 6) + y$
C. $6(y + 5)$
D. $5(y + 7) + y$

4



Which shape is formed by the net above?

A. Triangular prism
B. Square pyramid
C. Triangular pyramid
D. Isosceles triangle

5 Sophia uses 6 meters of ribbon to make 4 gift boxes. How many meters of ribbon does she need to make 10 gift boxes?

A. $1\frac{1}{2}$ meters
B. 15 meters
C. 12 meters
D. 14 meters

---

6 How many $\frac{3}{4}$ cup servings are in $\frac{5}{2}$ cups of soup? Which expression can be used to solve the problem?

A. $\frac{3}{4} \div \frac{5}{2}$
B. $\frac{4}{3} \times \frac{5}{2}$
C. $\frac{5}{2} \div \frac{3}{4}$
D. $\frac{3}{3} \times \frac{5}{2}$

7 Maria needs at least 20 more participants to sign up for the workshop next week. If p is the number of participants, which inequality shows how many Maria needs?

A. $p \leq 20$
B. $p < 20$
C. $p \geq 20$
D. $p > 20$

---

8 Here are the total scores for the first 6 games of Mia's soccer team:

Total score: 3, 6, 4, 7, 5, 8.

What is the mean of the total scores?

A. 5.2
B. 6
C. 6.5
D. 5.5

9 A jacket was on sale for 30% off. After the discount, Melani paid $42 for the jacket. What was the original price?

A. $72
B. $12
C. $60
D. $54

---

10 Solve 574.08 ÷ 6.4.

A. 89.7
B. 84.6
C. 89.654
D. 89.4

11 $\frac{b}{5}=15$

Which value for b makes the equation true?

A. 3
B. $\frac{1}{3}$
C. 45
D. 75

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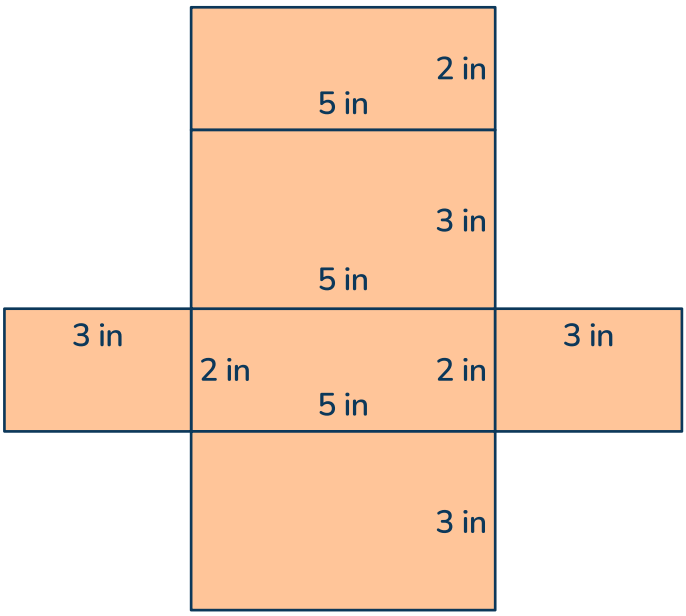
12 Izzy is wrapping a gift box. The net of the gift box is shown below.

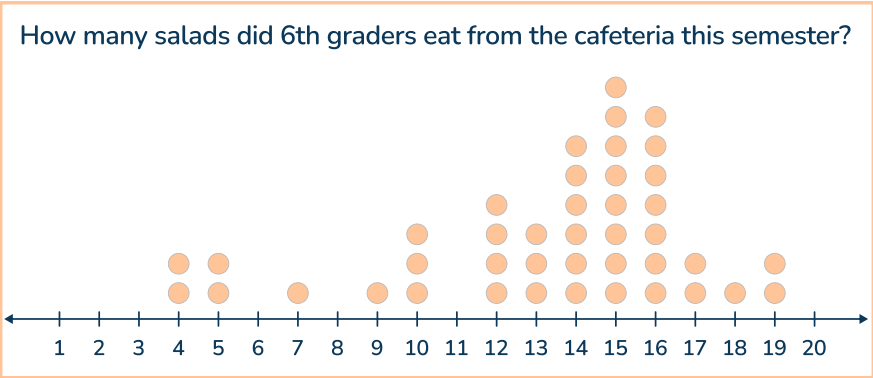


What area of the box will be covered by wrapping paper?

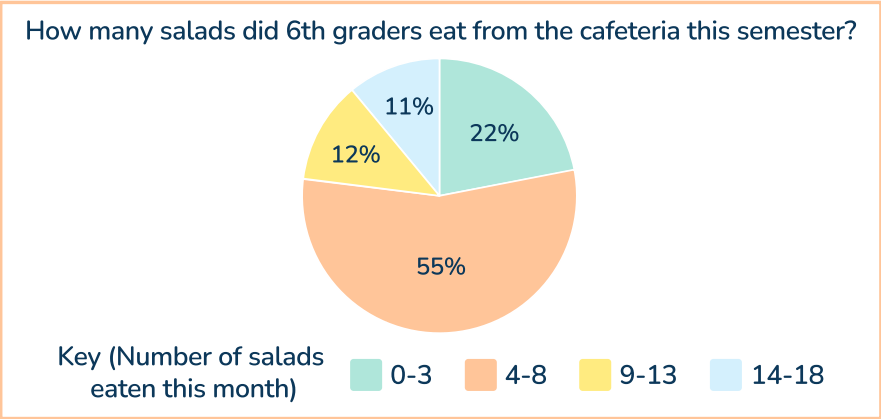
A. 33 in²
B. 63 in²
C. 44 in²
D. 62 in²

13 Which graph supports the conclusion that "most 6th graders ate 8 salads or less from the cafeteria this semester."

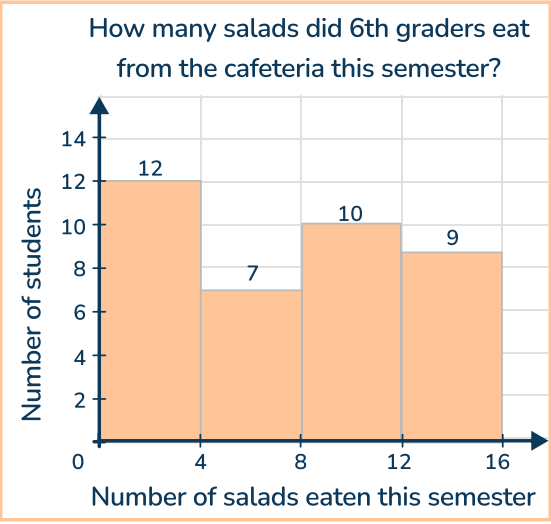
A.



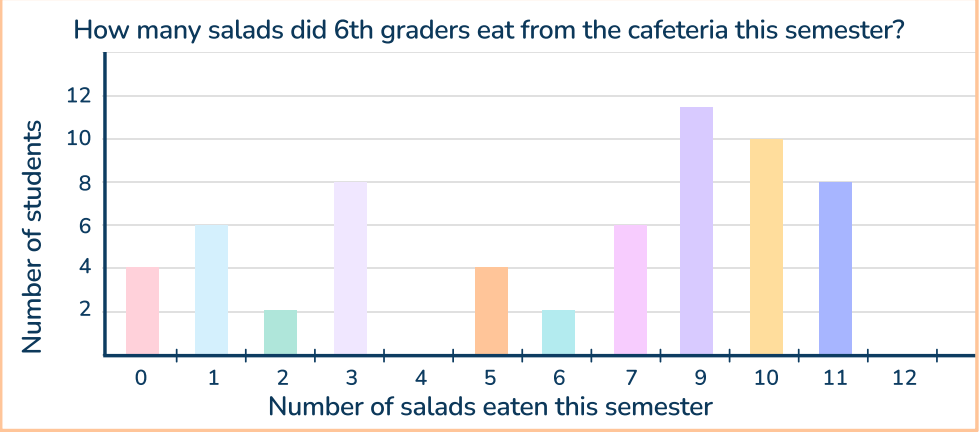
B.



C.



D.



14 Which statement is true?

A. $-3 < -2$
B. $-8 < -10$
C. $6.7 < 6\frac{7}{10}$
D. $3.005 > 3.05$

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15 Logan is collecting data on two water filters.

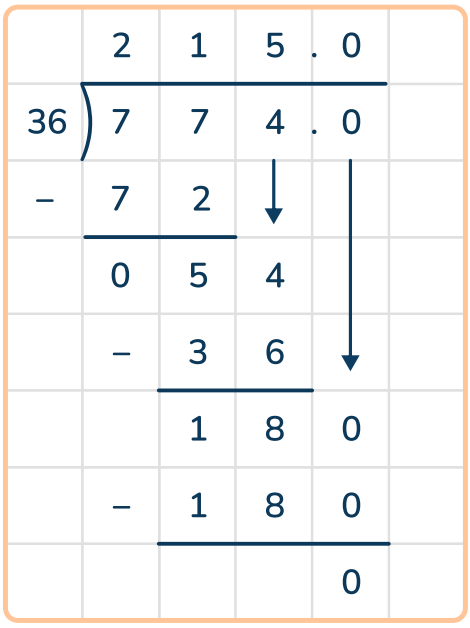
Water Filter A	
Time (minutes)	Ounces filtered
3	54
4	72
7	126

Water Filter B	
Time (minutes)	Ounces filtered
2	38
5	95
6	114

Which filter is faster and by how many ounces per minute?

A. Filter B is faster by 1 minute.
B. Filter A is faster by 18 ounces per minute
C. Filter B is faster by 1 ounce per minute
D. Filter A is faster by 1 ounce per minute

16 Pete solved 774 ÷ 36 using the standard algorithm. What mistake did he make?



A. He did not make a mistake.
B. He made a subtraction error.
C. He did not write the remainder as a fraction.
D. The decimal point in his answer is in the wrong place.

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17 Amara is seven years younger than her sister Lila. Which equation(s) show the relationship between Amara's age, a, and Lila's age, l? Select all the correct answers.

A. $l - 7 = a$
B. $l + 7 = a$
C. $a + 7 = l$
D. $l - a = 7$
E. $a - l = 7$

18 Which of the following is a statistical question?

A. How many students were in the cafeteria today?
B. Did Jamie go to the cafeteria today?
C. What is the average number of students in the cafeteria during lunch each day?
D. What time does lunch start in the cafeteria?

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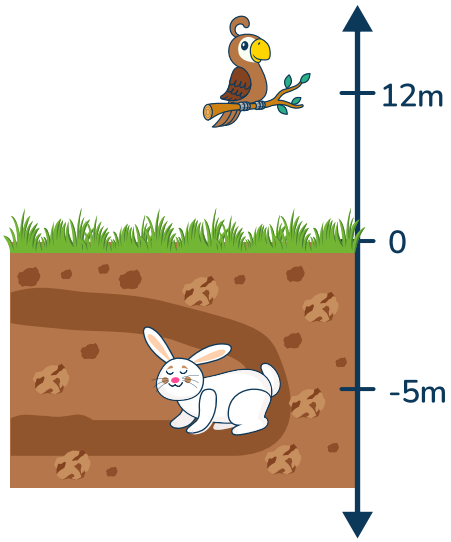
19 The diagram below shows a hawk perched on a tree branch 12 meters above the ground and a rabbit in a burrow 5 meters below ground level.



Which statement is true?

A. The hawk is 7 meters higher than the rabbit.
B. The temperature underground is -5 degrees.
C. The rabbit is 17 meters below the hawk.
D. The ground level is at 0, with the rabbit above and the hawk below.

20 Solve $3(4^2 - 2 + 5) \div \frac{1}{2}$.

A. 66
B. 57
C. 28.5
D. 114

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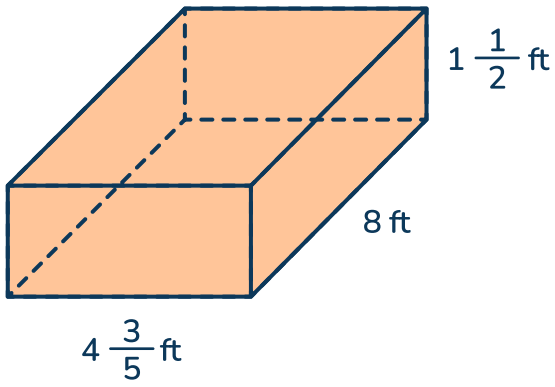
21 Calculate the volume of the rectangular prism.



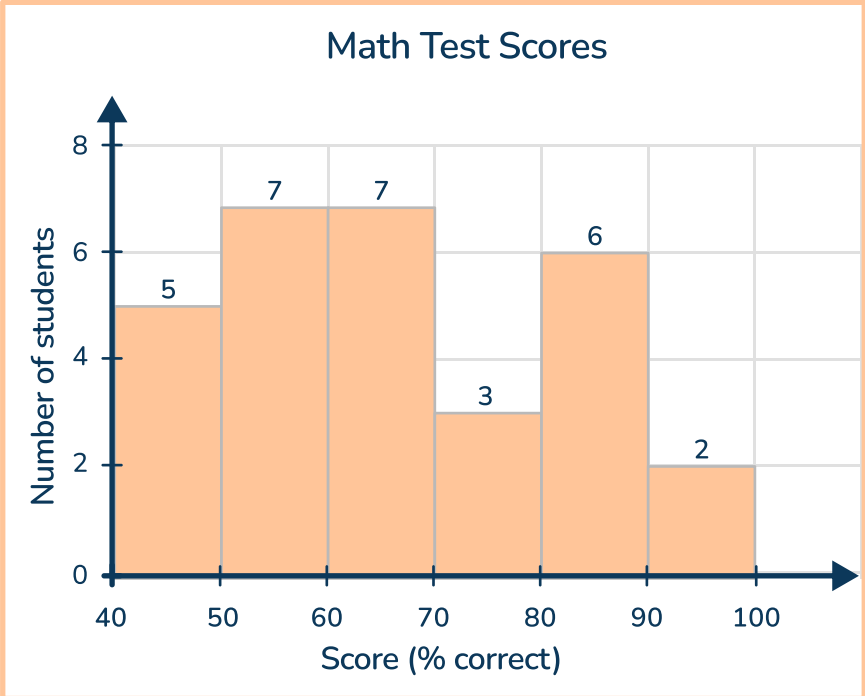
A. $111\frac{2}{5}$ ft³
B. $55\frac{1}{5}$ ft³
C. $32\frac{3}{10}$ ft³
D. $56\frac{2}{5}$ ft³

22 The drama club is selling raffle tickets for $3 each. Sarah wrote the following equation to represent the total money raised from selling tickets: $3t = m$

Which statements correctly describe Sarah's equation within the context? Select all the correct answers.

A. m is the total money raised from selling t raffle tickets.
B. t is the price of one raffle ticket.
C. $3t$ is the price per raffle ticket multiplied by the number of tickets sold.
D. 3 is the total number of tickets sold so far.
E. m has only one correct solution.

23



In the histogram above, which bin has the median data point?

A. 50-60
B. 60-70
C. 70-80
D. 80-90

24 Are the two expressions equivalent? Why or why not?

$$7m - 3n \quad \text{and} \quad -3n + 7m$$

A. Yes, because they both have the terms $7m$ and $3n$.
B. No, because equivalent expressions cannot have two variables.
C. Yes, because they are both combining the same terms, just in a different order.
D. No, because $-3n$ is not the same as $3n$.

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25 A recipe calls for 3 cups of flour for every 4 cups of sugar. Which statement about the ratio is true?

A. For every 4 cups of flour, there are 5 cups of sugar.
B. There is $\frac{4}{3}$ of a cup of flour for every cup of sugar.
C. For every 6 cups of flour, there are 8 cups of sugar.
D. There is $\frac{3}{4}$ of a cup of sugar for every cup of flour.

26 Georgia is solving the two equations below. She says, “I can just solve expression a, because expression b will have the same answer.” Do you agree? Why or why not?

- Expression a: $(46-9)^2$
- Expression b: $46-9^2$

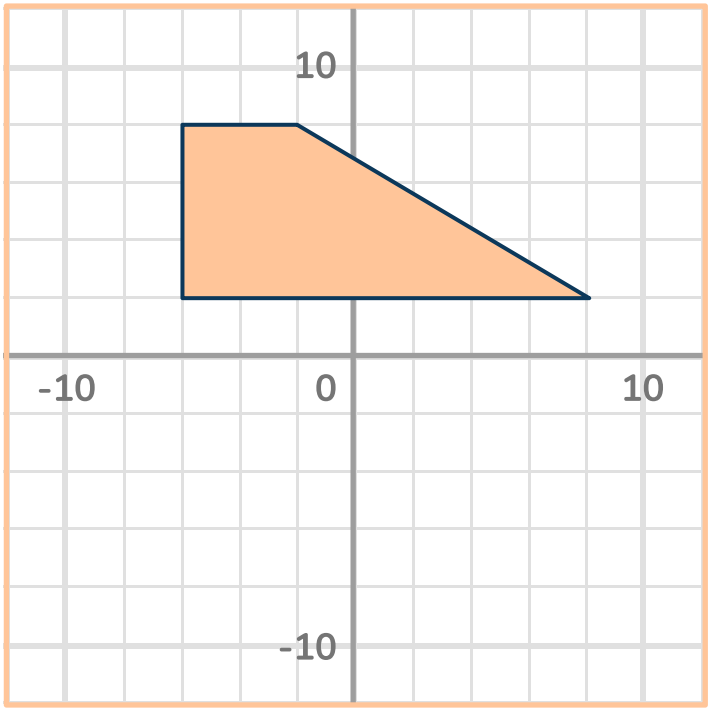
A. Yes, because the order of operations is the same.
B. No, because expression b will multiply by 2 first and expression a will not.
C. Yes, because the expressions have the same operations.
D. No, because expression a will subtract first and expression b will not.

---

27 Which expression is equivalent to 60 + 144?

A. 12(6 + 10)
B. 6 × 10 × 12
C. 12(5 + 12)
D. 12(10 + 8)

28 What is the area of the shape shown?



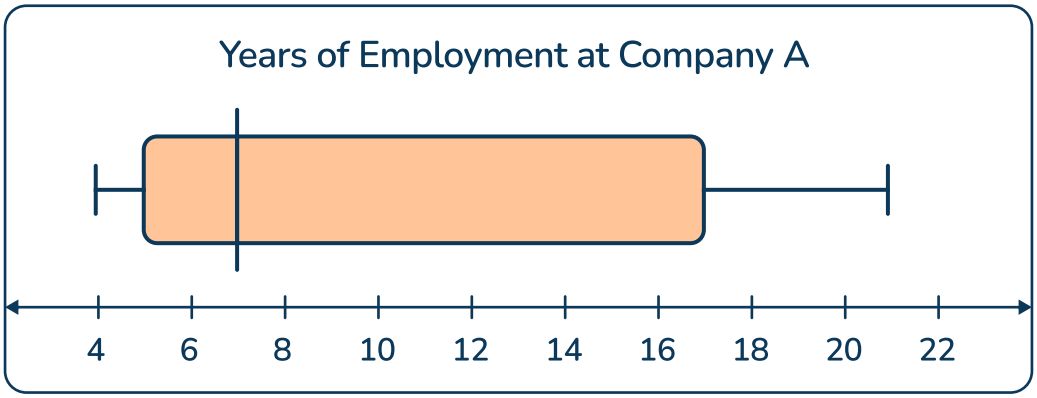
A. 54 units²
B. 27 units²
C. 13.5 units²
D. 48 units²

---

29 Which numbers are solutions for $t \leq -2$.

A. -3
B. -1
C. $\frac{1}{2}$
D. -2
E. $-\frac{1}{2}$

30 Which statement about the data shown in the box plot below is true? Select all correct answers.



A. The range is 15 years.

B. The second half of the data has more variability than the first half.

C. The IQR is 12.

D. The median length of employment is 11 years.

E. At least half the employees have 6 years of employment or less.

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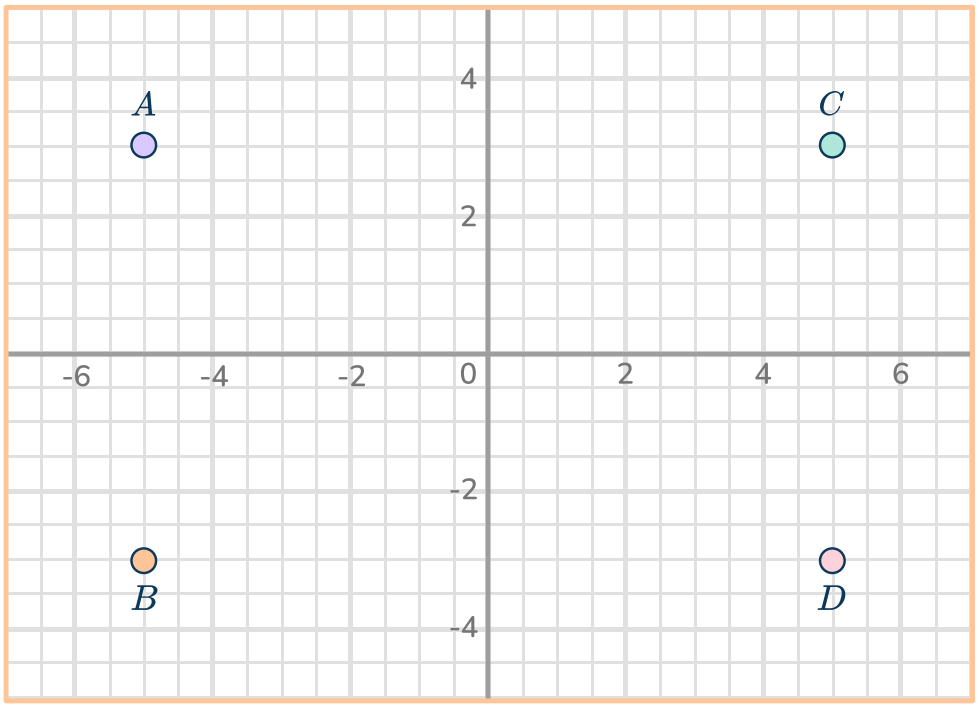
31 Which point shows the coordinates (5, -3)?



A. Point A

B. Point B

C. Point C

D. Point D

32 Which expression shows “5 less than the quotient of x and 4”?

A. $5 - x \div 4$
B. $4x - 5$
C. $\frac{x}{4} - 5$
D. $5 - 4x$

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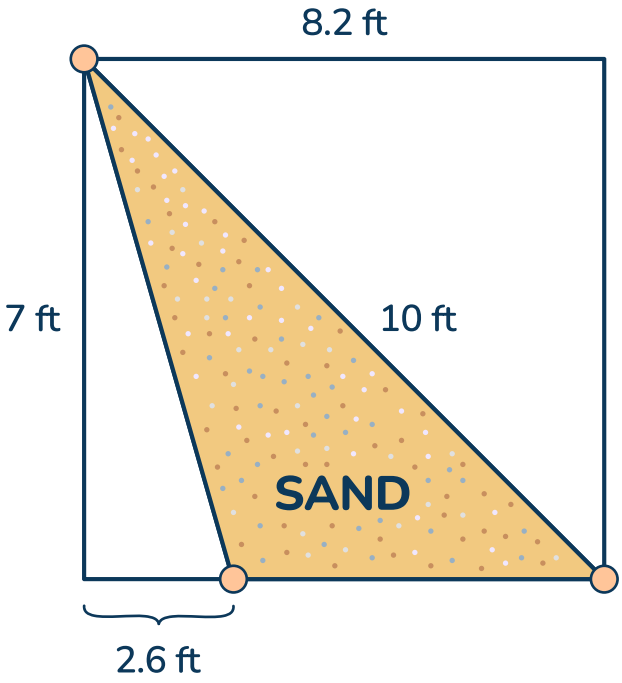
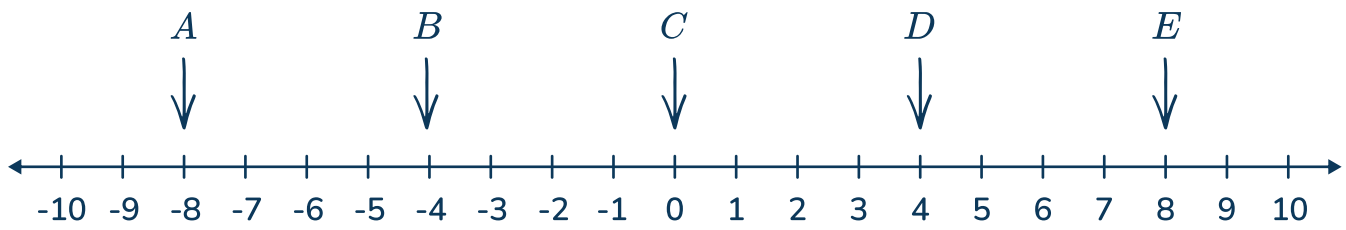
33 Tia is covering a triangular part of her garden with sand. The diagram below shows where Tia will place the sand.



How many square feet will Tia cover with sand?

A. 9.1 ft²
B. 19.6 ft²
C. 28.8 ft²
D. 28.7 ft²

34 Where is -(-8) on the number line?



A. A
B. B
C. C
D. D
E. E

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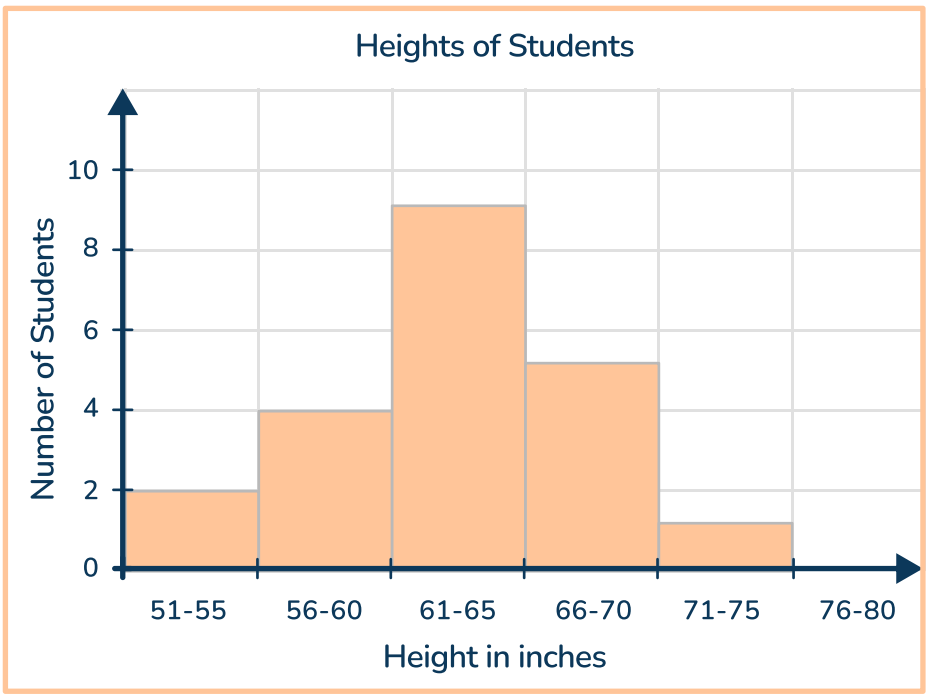
35 Maria spends $45 on materials to make candles. She sells each candle for $8. Which equation represents Maria's profit, p, after selling c candles?

A. $p = 8c - 45$
B. $45 + 8c = p$
C. $c = 8p - 45$
D. $45 + 8p = c$

36



Which statements are true about the data shown in the histogram above? Select all correct answers.

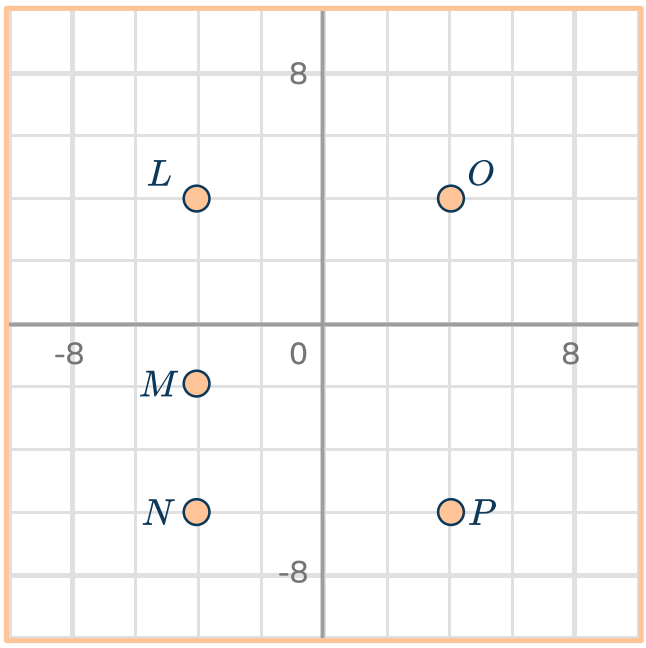
A. The graph includes data points for 23 people.
B. Each bar shows 1 height with 5 heights shown in total.
C. The tallest height is 80 inches.
D. Only whole number heights were collected.
E. The data is centered around the bin with the median.

---

37 There are $5\frac{1}{2}$ cups of flour in the pantry. If George needs $\frac{3}{4}$ of a cup of flour for each batch of cookies, how many complete batches can she make?

A. 5 batches
B. 6 batches
C. 7 batches
D. $7\frac{1}{3}$ batches

38



What is the distance between point L and point N?

A. -10 units
B. 10 units
C. -5 units
D. 5 units

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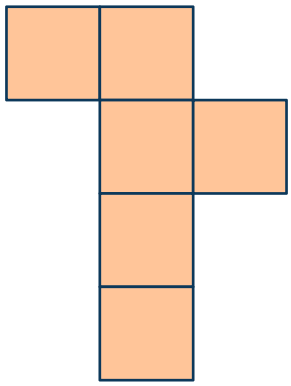
39 A cube has a side length of 6.3 inches. The net of the cube is shown below.



Ivy folds the cube up and fills it with water. How many cubic inches of water are in the cube?

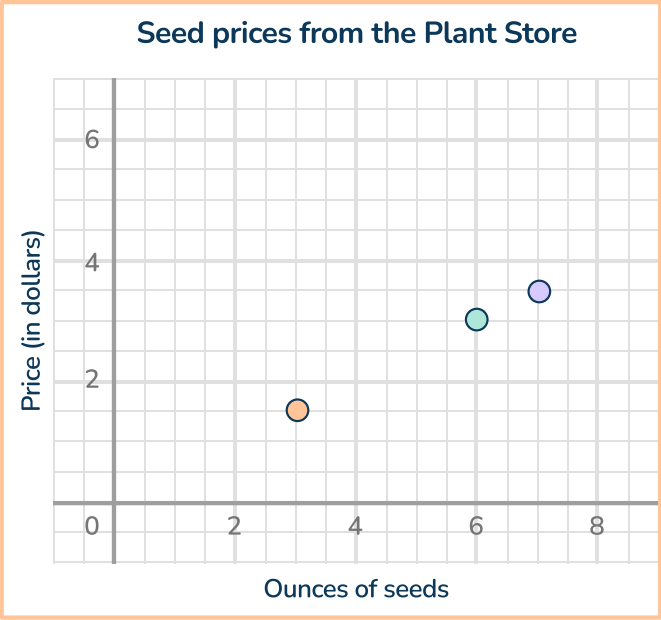
A. 250.047 inches^3
B. 37.8 inches^3
C. 238.14 inches^2
D. 132.54 inches^2

40 For the paint color olive green, the ratio of ounces of yellow paint to blue paint is 4:5. Which of the following mixtures will NOT create olive green?

A. 48 ounces of yellow and 60 ounces of blue
B. 32 ounces of yellow and 45 ounces of blue
C. 20 ounces of yellow and 25 ounces of blue
D. 56 ounces of yellow and 70 ounces of blue

Standard: 6.EE.9, 6.RP.3, 6.EE.7
DOK 3
Short Answer Response - 6 points

41 The graph and table below show information about seeds being sold by a grocery store and by a farmer.



Seed prices from the farmer	
Ounces of seeds	Price
4	$1.80
5	$2.25
8	$3.60

Part A: Which seeds are cheaper per ounce? Explain how you solved.

_____
_____
_____
_____

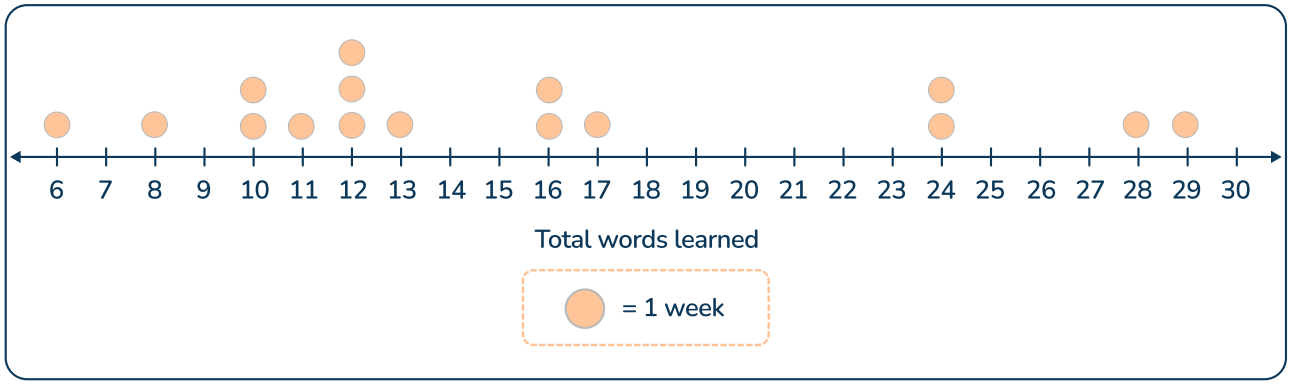
A Hardware store sells seeds in packages of 3 ounces. They use the equation $1.20p = t$, where p is the number of packages and t is the total price.

Part B: Compare the price of seeds per ounce at the Hardware store to the seeds from Part A? Explain how you solved.

_____
_____
_____
_____

Extended response - 6 points
Standard: 6.SP.2, 6.SP.3, 6.SP.5, 6.NS.3
DOK 3

42 Olive is learning new words in Spanish. Each week she records how many words she has learned.



Part A:
Calculate the following measures of center and spread of the data set.

Mean: _____ Median:_____ Mode:_____ Range:_____

Part B: When Olive started, her goal was to learn 14 words a week on average. Is she meeting her goal? Why or why not?

_____

_____

_____

_____

Answer Key - Multiple Choice

Item number	Correct answer	Standard(s)	DOK
1	B	**6.RP.1**	DOK 1
2	C	**6.NS.6c**	DOK 1
3	D	**6.EE.3**	DOK 2
4	A	**6.G.4**	DOK 1
5	B	**6.RP.3b**	DOK 2
6	B, C	**6.NS.1**	DOK 3
7	C	**6.EE.8**	DOK 2
8	D	**6.SP.5b**	DOK 1
9	C	**6.RP.3c**	DOK 2
10	A	**6.NS.3**	DOK 1
11	D	**6.EE.5**	DOK 1
12	D	**6.G.4**	DOK 2
13	B	**6.SP.4, 6.SP.5c**	DOK 2
14	A	**6.NS.7**	DOK 1
15	C	**6.RP.3a, 6.RP.3b**	DOK 2
16	D	**6.NS.2**	DOK 3
17	A, C, D	**6.EE.6, 6.EE.7**	DOK 2
18	C	**6.SP.1**	DOK 1
19	C	**6.NS.5**	DOK 2

Item number	Correct answer	Standard(s)	DOK
20	D	**6.EE.1**	DOK 1
21	B	**6.G.2**	DOK 1
22	A, C	**6.EE.9**	DOK 2
23	B	**6.SP.3, 6.SP.5c**	DOK 1
24	C	**6.EE.4**	DOK 3
25	C	**6.RP.1, 6.RP.2, 6.RP.3**	DOK 2
26	D	**6.EE.1**	DOK 2
27	C	**6.NS.4**	DOK 1
28	A	**6.G.1, 6.G.3**	DOK 2
29	A, D	**6.EE.8, 6.NS.7a**	DOK 1
30	B, C	**6.SP.4, 6.SP.5c, 6.SP.5d**	DOK 2
31	D	**6.NS.8**	DOK 1
32	C	**6.EE.2**	DOK 1
33	B	**6.G.1**	DOK 2
34	E	**6.NS.6a**	DOK 1
35	A	**6.EE.9**	DOK 2
36	E	**6.SP.2, 6.SP.4, 6.SP.5b**	DOK 2
37	C	**6.NS.1**	DOK 2
38	B	**6.NS.8**	DOK 2
39	A	**6.G.2**	DOK 2
40	B	**6.RP.1, 6.RP.3**	DOK 1

Item	KEY	Rationale
41	6 points	Student correctly calculates the unit seed prices: • Plant store - $0.50 per ounce • Farmer - $0.45 per ounce • Hardware store - $0.40 per ounce Student clearly explains how they found the unit price from the graph, table and equation.
	5 points	The student correctly calculates the unit seed prices: • Plant store - $0.50 per ounce • Farmer - $0.45 per ounce • Hardware store - $0.40 per ounce Student explains how they found the unit price from the graph, table and equation, but some parts of the explanation are incomplete or unclear.
	4 points	Student correctly calculates 2 out of 3 the unit seed prices: • Plant store - $0.50 per ounce • Farmer - $0.45 per ounce • Hardware store - $0.40 per ounce Student explains how they found the unit price from the graph, table and equation.
	3 points	The student correctly calculates 2 out of 3 the unit seed prices: • Plant store - $0.75 per ounce • Farmer - $0.70 per ounce • Hardware store - $0.65 per ounce Student explains how they found the unit price from the graph, table and equation, but some parts of the explanation are incomplete or unclear.
	2 points	The student correctly calculates 1 out of 3 the unit seed prices: • Plant store - $0.50 per ounce • Farmer - $0.45 per ounce • Hardware store - $0.40 per ounce Student explains how they found the unit price from the graph, table and equation, but some parts of the explanation are incomplete or unclear.

Item	KEY	Rationale
	1 point	Student miscalculates all of the unit seed prices: • Plant store - $0.50 per ounce • Farmer - $0.45 per ounce • Hardware store - $0.40 per ounce The student explains how they attempted to find the unit price from the graph, table and equation, but some parts of the explanation are incomplete or unclear.
	0 points	The response is blank or does not include any correct calculations or explanations.

Item	KEY	Rationale
42	6 points	The student correctly calculates: • Mean - 15.5 • Median - 12.5 • Mode - 12 • Range - 23 Student correctly describes the overall spread, connecting both the center and spread to Olive's goal. For example, "Olive's mean is meeting the goal, but the median is not. The value of the mean is larger because it was affected by the few weeks on the right with a large amount of words learned. The median is lower than Olive's goal since most of her weeks are between 6 and 15." *Response may vary, but should clearly explain the connection between the measures of center and spread.
	5 points	The student correctly calculates: • Mean - 15.5 • Median - 12.5 • Mode - 12 • Range - 23 Student describes the overall spread, connecting both the center and spread to Olive's goal, but some parts may be incomplete or unclear.
	4 points	The student correctly calculates 3 out of 4: • Mean - 15.5 • Median - 12.5 • Mode - 12 • Range - 23 Student correctly describes the overall spread, connecting both the center and spread to Olive's goal.

Item	KEY	Rationale
	3 points	The student correctly calculates 3 out of 4: • Mean - 15.5 • Median - 12.5 • Mode - 12 • Range - 23 Student describes the overall spread, connecting both the center and spread to Olive's goal, but some parts may be incomplete or unclear.
	2 points	The student correctly calculates 2 out of 4: • Mean - 15.5 • Median - 12.5 • Mode - 12 • Range - 23 Student attempts to describe the overall spread, connecting both the center and spread to Olive's goal, but most parts are incomplete or unclear.
	1 point	Student correctly calculates 1 out of 4: • Mean - 15.5 • Median - 12.5 • Mode - 12 • Range - 23 Student describes the overall spread, connecting both the center and spread to Olive's goal, but some parts may be incomplete or unclear.
	0 points	Response is blank or does not include any correct calculations or explanations.

ANSWERS SORTED BY CCSS STRAND

RP (4 - 9)			
1	B	**6.RP.1**	DOK 1
5	B	**6.RP.3b**	DOK 2
9	C	**6.RP.3c**	DOK 2
15	C	**6.RP.3a, 6.RP.3b**	DOK 2
25	C	**6.RP.1, 6.RP.2, 6.RP.3**	DOK 1
40	B	**6.RP.1, 6.RP.3**	DOK 1

NS (9 - 11)			
2	C	**6.NS.6c**	DOK 1
6	B, C	**6.NS.1**	DOK 3
10	A	**6.NS.3**	DOK 1
14	A	**6.NS.7**	DOK 1
16	D	**6.NS.2**	DOK 3
19	C	**6.NS.5**	DOK 2
27	C	**6.NS.4**	DOK 1
31	D	**6.NS.8**	DOK 1
34	E	**6.NS.6a**	DOK 1
37	C	**6.NS.1**	DOK 2
38	B	**6.NS.8**	DOK 2

EE (11 - 16)			
3	D	**6.EE.3**	DOK 2
7	C	**6.EE.8**	DOK 2
11	D	**6.EE.5**	DOK 1
17	A, C, D	**6.EE.6, 6.EE.7**	DOK 2
20	D	**6.EE.1**	DOK 1
22	A, C	**6.EE.9**	DOK 2
24	C	**6.EE.4**	DOK 3
26	D	**6.EE.1**	DOK 2
29	A, D	**6.EE.8, 6.NS.7a**	DOK 1
32	C	**6.EE.2**	DOK 1
35	A	**6.EE.9**	DOK 2

G (5 - 7)			
4	A	**6.G.4**	DOK 1
12	D	**6.G.4**	DOK 2
21	B	**6.G.2**	DOK 1
28	A	**6.G.1, 6.G.3**	DOK 2
33	B	**6.G.1**	DOK 2
39	A	**6.G.2**	DOK 2

SP (7 - 11)			
8	D	**6.SP.5.b**	DOK 1
13	B	**6.SP.4, 6.SP.5c**	DOK 2
18	C	**6.SP.1**	DOK 1
23	B	**6.SP.3, 6.SP.5c**	DOK 1
30	B, C	**6.SP.4, 6.SP.5c, 6.SP.5d**	DOK 2
36	E	**6.SP.2, 6.SP.4, 6.SP.5b**	DOK 2

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