THIRD SPACE LEARNING

6th Grade Virginia State Test

State Test Grade 6

Grade 6

Questions

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

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

Unit 1
10 questions

You are NOT permitted to use calculators.

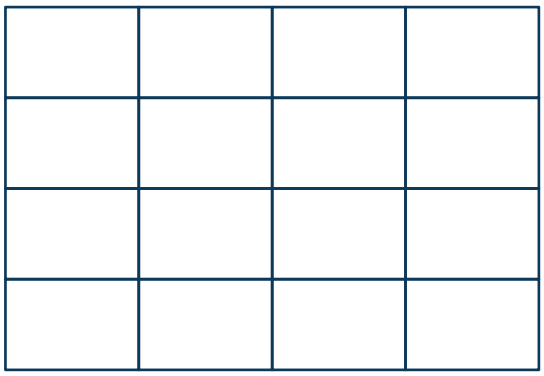
1 A grocery store has 23 red apples and 38 green apples. What is the ratio of green apples to total apples?

A. 23:38
B. 38:23
C. 61:38
D. 38:61

2 Select the numbers that are equivalent to $\frac{4}{5}$.

A. 0.4
B. 40%
C. 0.8
D. $\frac{8}{10}$
E. 0.4
F. 80%

3 The model represents 1. Shade it to represent $\frac{5}{8}$.



4 What is the value of a? Place your answer in the space provided.

a = _____

5 What is the value of b? Place your answer in the box provided.

$\frac{b}{3} = 12$

Answer

6 Arrange the numbers below in order from greatest to least.

$0.08, \frac{2}{5}, 10\%, \frac{3}{4}, 0.2, 30\%$

Place your answer in the space provided: _____

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7 Rewrite the expression using exponents.

$11 \times 11 \times 11 \times 11 \times 11$

Place your answer on the space provided:_____

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8 Find the product of $2\frac{1}{4} \times 1\frac{1}{6}$. Use the space below to show your work and write your answer as a mixed number.

Answer

9 Find the value of $50-3(2)^3$

Place your answer in the space below.

Answer

10 Select all the numbers that will make the solution below negative.

|-7| - _____

A. -8

B. 8

C. -1

D. 10

E. -9

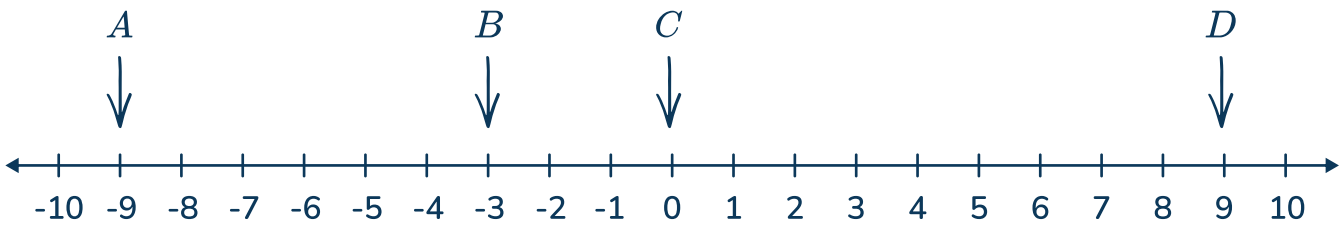
Unit 2
25 questions

You are permitted to use calculators.

1 Chantal makes 8 bracelets with 3 yards of string. How many yards of string does she need for 16 bracelets? Place your answer in the box provided.

Answer

2 Where is -(-9) on the number line?



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

3 Emery is collecting data on two water filters.

Water Filter A	
Time (minutes)	Ounces filtered
3	51
4	68
7	119

Water Filter B	
Time (minutes)	Ounces filtered
2	32
5	80
6	96

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

A. Filter A is faster by 1 ounce per minute

B. Filter B is faster by 1 ounce per minute

C. Filter A is faster by 4 ounces per minute

D. Filter B is faster by 17 ounces per minute

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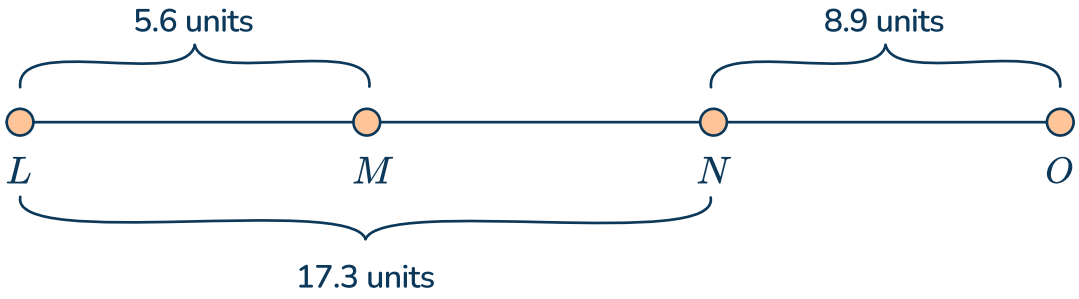
4 The student council is selling tickets to the school dance. The tickets cost $4 each.

Write an equation representing the total amount of money the student council makes from selling the tickets. Use c for the total cost and t for the number of tickets. If the student council makes $552, use your equation to find how many tickets they sold.
Use the space below to write your answer.

Answer

5 The measures of the line segments are given on the figure below. Find the length of segment MN. Use the space below to show your work. (Figure not drawn to scale)



Answer

6 Kelly drove 228 miles in 4 hours.
How many miles per hour did Kelly drive? Place your answer in the box provided.

Answer

Kelly continues at that same rate and travels another 513 miles. How many hours will it take Kelly to drive 513 miles? Place your answer in the box provided.

Answer

7 Lucas and his friends plan to visit Yellowstone waterfalls scenic lookout. They will rest after they hike 3 miles. They will hike the remaining $1\frac{1}{2}$ miles to the lookout. The trail they will take to return from the lookout is $\frac{3}{4}$ mile shorter than the trail they will use to go to the lookout. Each of them will bring $\frac{1}{4}$ gallon of water for each complete mile to and from the lookout.

- Determine the total distance, in miles, Lucas and his friends will hike.
- Determine the total number of gallons of water each of them will bring.

Answer

8 Which expression shows "2 less than the quotient of b and 3"?

A. 2 - b ÷ 3

B. $\frac{b}{3}$ - 2

C. $3b$- 2

D. 2 - $3b$

9 Dara's garden is circular with a pathway that goes right through the center of the circle connecting one edge of the garden to the other edge. The pathway is 32 feet long.

- Dara wants to put a fence around the garden. Calculate how many feet of fencing she will approximately need.
- Dara also wants to calculate the area of the garden. Calculate to the nearest square foot the approximate area of the garden.

Use the space below to show your calculations.

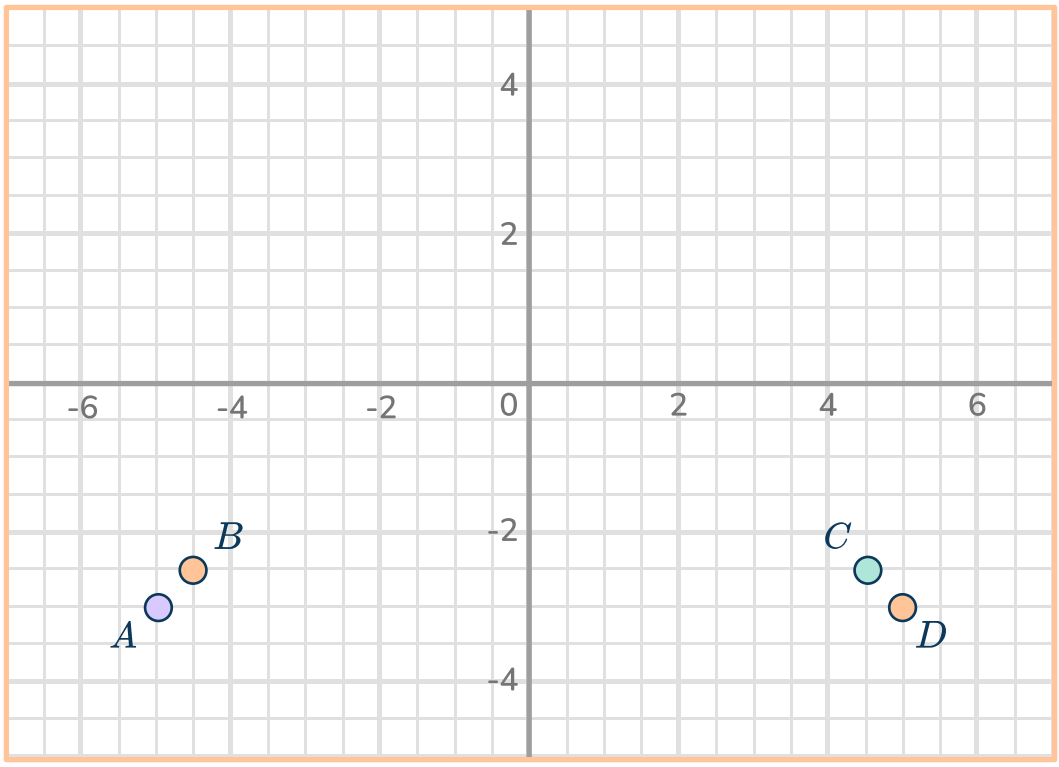
Answer

10 Mike's new office is in the shape of a rectangle. The perimeter of his office is 58 feet and the length of the office is 17 feet. How many feet is the width of his office?

Use the space below to show your work.

Answer

11 Which point shows the coordinates (5, -3)? Place your answer in the space provided.



Answer: _____

12 The table below shows the types of fruit the Samaha Farm sold on Saturday afternoon.

Samaha Farm Sales	
Type of Fruit	Number of fruits sold
Peaches	28
Watermelon	12
Apples	32
Plums	36

- Write the ratio of the number of peaches sold to the total number of plums sold.

Answer:_____

- Select the numbers that make the statement true.

For every _____ peaches that are sold, _____ plums sold.

A. 7 and 9
B. 8 and 9
C. 9 and 7
D. 9 and 8

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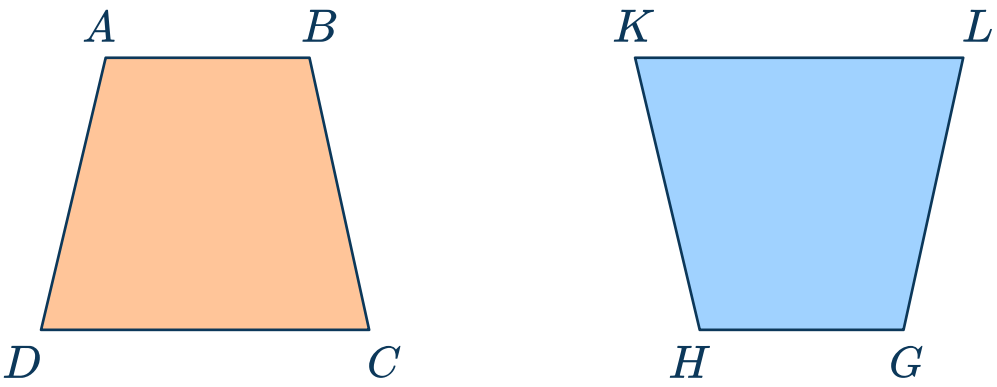
13 Tema has several online subscriptions to various news outlets. She subscribes to at least 5 online subscriptions, where “s” represents the amount of subscriptions. Write an inequality representing this situation and place it on the line below.

Answer:_____

14 Trapezoid ABCD is congruent to trapezoid GHKL.



Select the statement that is true.

A. Segment CD is congruent to segment GH

B. Segment BC is congruent to segment KL

C. Segment KL is congruent to segment DC

D. Segment AD is congruent to segment KL

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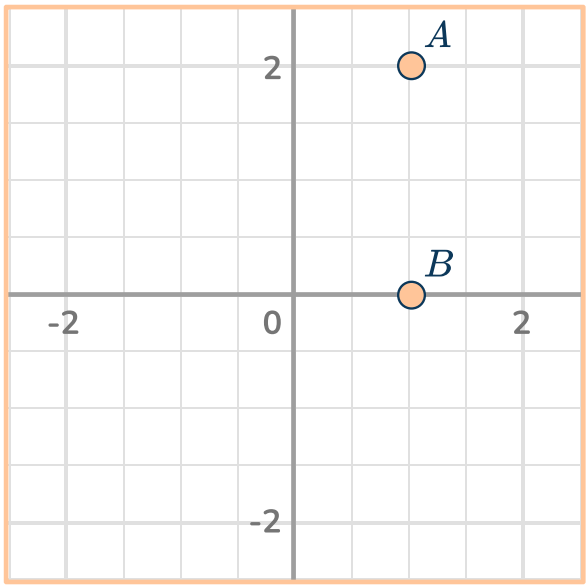
15 What is the distance between the points on the coordinate plane?



Answer:_____

16 The temperature on a given day in the arctic circle is -17° F. What change in the temperature would bring the temperature to 0°F?

A. 0

B. -17

C. 18

D. 17

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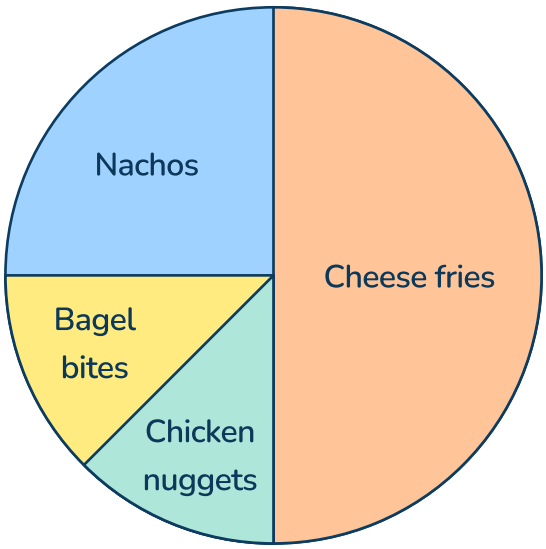
17 Beach Bites, the new snack place on the boardwalk, surveyed a sample of 120 customers on their favorite snack. The pie chart below represents the data.

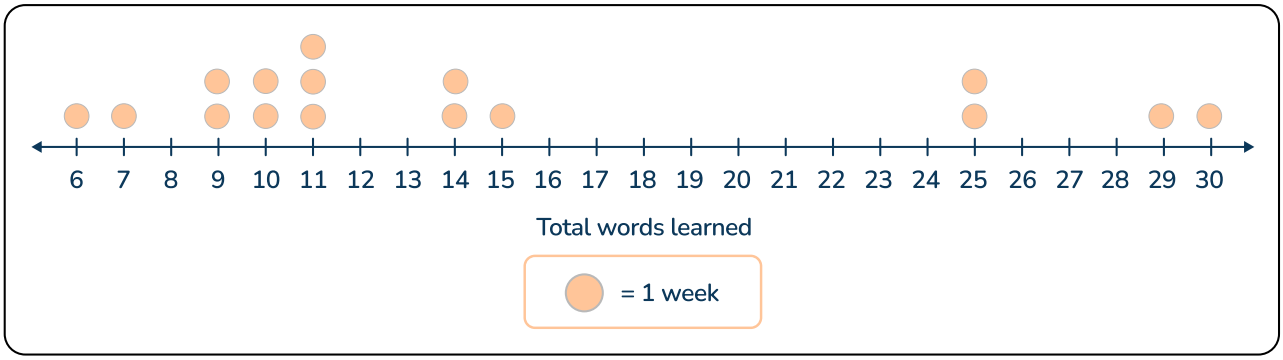


Approximately how many more people like cheese fries over nachos?

Use the space below to show your work.

Answer

18 Lily is learning new words in French. Each week she records how many words she has learned.



When Lily started, her goal was to learn 14 words a week, on average. Is she meeting her goal? Why or why not? Use the space below to explain your answer.

Answer

19 Linda runs at a constant rate of 2 miles for every 16 minutes. Which ratio table represents the relationship between the time (in minutes) she runs and the distance she covers (in miles)?

A.

Minutes	Miles
16	2
48	4
64	8
80	10

B.

Minutes	Miles
16	2
32	4
64	8
128	16

C.

Minutes	Miles
16	2
32	2
64	2
80	2

D.

Minutes	Miles
16	2
32	4
64	16
80	32

20 The area of a rectangular rug is $6\frac{3}{4}$ ft² and the length of the rug is $2\frac{1}{2}$ ft. Find the measure of the width of the rug. Use the space below to show your work.

Answer

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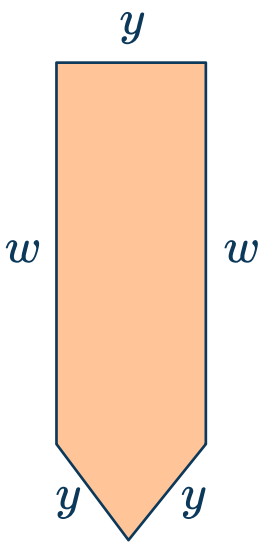
21 Which expression represents the perimeter of the irregular figure below?



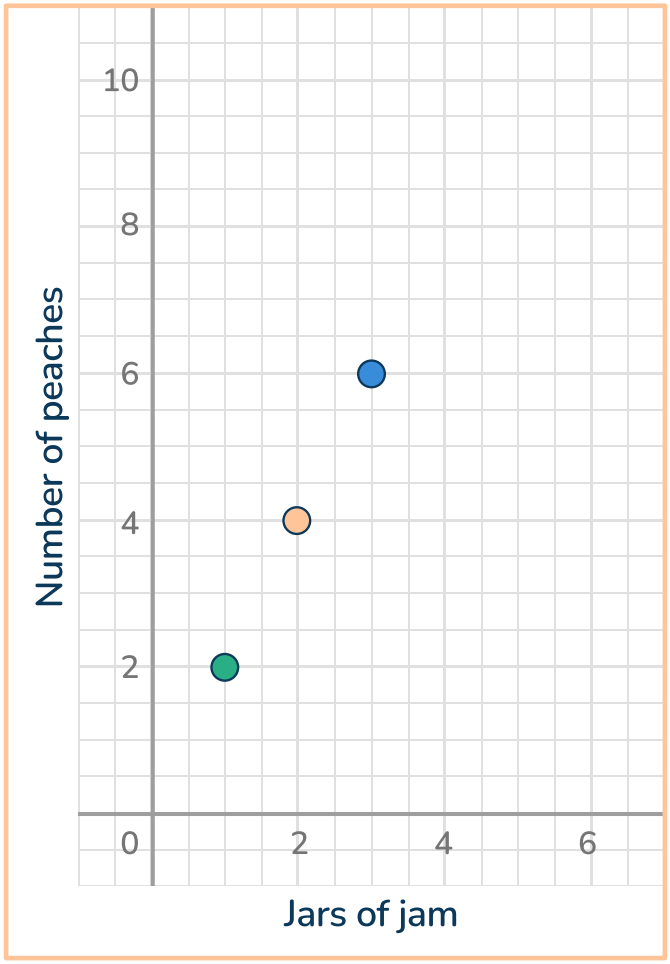
A. $w^2 + y^3$

B. $w + y$

C. $2w + 3y$

D. $5(w + y)$

22 Rosalind makes homemade peach jam every August. The graph below shows the relationship between the number of jars of jam, j, she makes and the number of peaches, p, needed per jar.



- Is the relationship between the jars of jam and the number of peaches proportional?

Use the space to explain your answer

Answer

- How many peaches will be needed for 12 jars of jam?

Answer:_____

23 Write an inequality that represents the number line below.

Answer:_____

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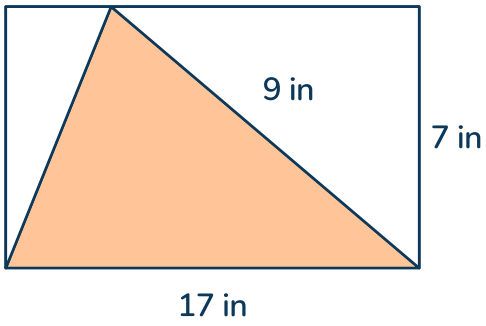
24 Find the area of the shaded region in the diagram below.



A. 59.5 in²

B. 63 in²

C. 119 in²

D. 31.5 in²

25 The tables below show the amount of time it took Randy and Claudia to pack boxes.

Claudia	
Time (minutes)	Number of boxes
5	4
10	8
15	12

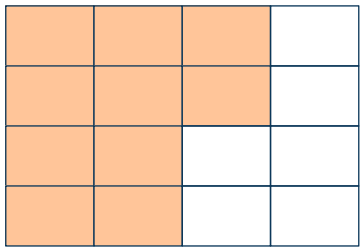
Randy	
Time (minutes)	Number of boxes
7	6
14	12
21	18

- If they both maintain this rate, how many boxes will they pack in 35 minutes?
- Who has the faster rate?

Use the space below to show your answer

Answer

Answer Key

UNIT 1 - NO CALCULATOR			
Item number	Correct answer	Standard(s)	DOK
1	**D**	**6.PFA.1b**	DOK 1
2	C, D, F	**6.NS.1e**	DOK 2
3	 Any 10 shaded	**6.NS.1**	DOK 2
4	$a = -3$	**6.NS.2a**	DOK 2
5	$b = 36$	**6.PFA.3c**	DOK 2
6	$\frac{3}{4}, \frac{2}{5}$,30%,0.2,10%, 0.08	**6.NS.1e**	DOK 2
7	$(11)^5$	**6.NS.3**	DOK 2
8	$2\frac{5}{8}$	**6.CE.1b**	DOK 1
9	50 - 3(8) 50 - 24 = 26	**6.CE.2**	DOK 2
10	B, D	**6.CE.2c**	DOK 3

UNIT 2 - CALCULATOR			
Item number	Correct answer	Standard(s)	DOK
1	$\frac{8}{3} = \frac{16}{?}$ $\frac{8 \times 2}{3 \times 2} = \frac{16}{6}$ 6 yards	**6.PFA.2**	DOK 3
2	D	**6.NS.2a**	DOK 3
3	A	**6.PFA.2b**	DOK 3
4	$c = 4t$ $552 = 4t$ $138 = t$	**6.PFA.3e**	DOK 3
5	17.3 - 5.6 = 11.7 MN = 11.7 units	**6.MG.4** **6.CE.1**	DOK 3
6	Kelly drove at a rate of 57mph It will take Kelly 9 hours to drive 513 miles	**6.PFA.2**	DOK 2
7	$3 + 1\frac{1}{2} = 4\frac{1}{2}$ $4\frac{1}{2} + 3\frac{3}{4} = 8\frac{1}{4}$ miles $\frac{1}{4} \times 8 = 2$ gallons of water	**6.PFA.2** **6.CE.1**	DOK 3
8	B	**6.PFA.3**	DOK 2

UNIT 2 - CALCULATOR			
Item number	Correct answer	Standard(s)	DOK
9	$c = 32 \times \Pi \approx 101$ feet for fencing $A = (16)^2\ \Pi \approx 804$ ft² area of garden	**6.MG.3** **6.CE.1**	DOK 2
10	Perimeter = all the sides added up $58 = 17 + 17 + w + w$ 12 = width	**6.MG.2** **6.PFA.3**	DOK 3
11	**Point D**	**6.MG.3**	DOK 1
12	Ratio of peaches to the plums = 28:36 Or 7:9 A – For every 7 peaches that are sold, 9 plums are sold.	**6.PFA.1** **6.PFA.2**	DOK 2
13	$s \geq 5$	**6.PFA.4**	DOK 2
14	C	**6.MG.4c**	DOK 2
15	2 units	**6.MG.3e**	DOK 1
16	D	**6.CE.2**	DOK 2
17	$120 \times \frac{1}{4} = 30$ people like nachos $120 \times \frac{1}{2} = 60$ people prefer cheese fries 60 - 30 = 30 30 people more prefer cheese fries	**6.PS.1** **6.CE.1**	DOK 3

UNIT 2 - CALCULATOR			
Item number	Correct answer	Standard(s)	DOK
18	She is meeting the goal because in the 16 weeks she averages about $14.75 \approx 15$ words	**6.PS.2**	DOK 3
19	B	**6.PFA.2**	DOK 2
20	$A = l \bullet w$ $6\frac{3}{4} = (2\frac{1}{2})(w)$ $\frac{27}{4} \div \frac{5}{2} = w$ $\frac{27}{4} \times \frac{2}{5} = w$ $\frac{27}{10} = w$ $2\frac{7}{10}$ ft = width	**6.MG.2** **6.CE.1**	DOK 2
21	C	**6.MG.2** **6.PFA.3**	DOK 2
22	Yes proportional, 2 peaches per 1 jar 24 peaches for 12 jars	**6.PFA.2d** **6.PFA.3**	DOK 3
23	$x \geq -3$	**6.PFA.4**	DOK 2
24	A $A = \frac{1}{2} \times b \times h$ $A = \frac{1}{2}(17 \times 7)$ $A = 59.5$ in²	**6.MG.2**	DOK 2

UNIT 2 - CALCULATOR			
Item number	Correct answer	Standard(s)	DOK
25	Randy: $\frac{7}{6} = \frac{7 \times 5}{6 \times 5} = \frac{35}{30}$ 30 boxes in 35 minutes Claudia: $\frac{5}{4} = \frac{5 \times 7}{4 \times 7} = \frac{35}{28}$ 28 boxes in 35 minutes Randy has a faster rate	**6.PFA.1** **6.PFA.2**	DOK 3

Breakdown of Assessment by domain				
Number and Number Sense (NS)	Computation and Estimation (CE)	Measurement and Geometry (MG)	Probability and Statistics (PS)	Patterns, Functions, and Algebra (PFA)
14%	21%	20%	5%	40%

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