THIRD SPACE LEARNING

7th Grade Washington State Practice Math Test

Washington Practice Test
Grade 7

Grade 7

Questions

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

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

1 Which expression has the greatest value when $x = 35$?

A. x - 35
B. 35 - x
C. x - (- 35)
D. - 35 - x

2 $\frac{2}{3}$ of a serving has $\frac{1}{4}$ of a cup of vegetables. How many cups of vegetables are in 1 serving?

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

B. $1\frac{1}{3}$

C. $\frac{7}{12}$

D. $\frac{3}{8}$

3 Which expressions are equivalent to $3(y + 0.75) - 4.9y - 1$? Select all the correct answers.

A. $-1.9y + 1.25$
B. $-1.9y + 2.25$
C. $-2y + 1.25$
D. $-1.9y - 2.25$
E. $-1.9y - 1.25$

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4 A bag contains orange buttons, red buttons and black buttons. The number of each of the buttons in the bag is as follows:

- 10 orange buttons
- 20 red buttons
- 25 black buttons

What is the probability that the buttons selected is NOT black?

A. $\frac{30}{25}$

B. $\frac{6}{11}$

C. $\frac{4}{5}$

D. $\frac{2}{11}$

5 A jacket that was originally $89.00 is on sale for 30% off. After the discount and the addition of a 7% sales tax. How much will you pay for the jacket? Choose the equation representing the total cost, c.

A. 89 x 0.3 x 0.07 = c
B. 89 x 0.3 + 1.07 = c
C. (89 x 0.7) x 1.07 = c
D. 89 x 0.7 + 89 x 0.07 = c

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6 A store sells a 3-pack of t-shirts for $23. They also sell a 6-pack of t-shirts for $29.99. What is the difference between the unit rates?

A. $2.25 per pack
B. $4.99 per pack
C. $2.67 per pack
D. $3.65 per pack

7 Which expressions are equal to –32? Select all the correct answers.

A. –8 x 4
B. –32 ÷ (–1)
C. 2 x (–16)
D. 2^5
E. –4 x –8

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8 Which scenario below will result in a final value of zero?

A. The overall change in temperature from 7° to -7°.
B. Walking from a train platform that is -10 feet below sea level to the street.
C. A hot air balloon that goes from sea level to 25 meters above sea level.
D. The balance of an account after a $50 payment, if the starting balance was –$50.

9 Which value of x makes the equation true?

$3(x - 5) - 6 = -\frac{1}{2}(6x - 18)$

A. $x = -5$
B. $x = 4$
C. $x = -4$
D. $x = 5$

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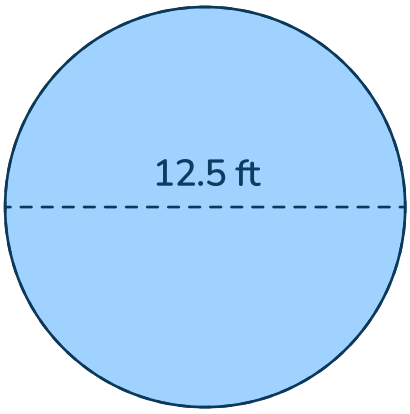
10 A school is building a new fence around their circular compost bin, shown in the diagram below.



How many feet of fencing is needed to enclose the compost bin?

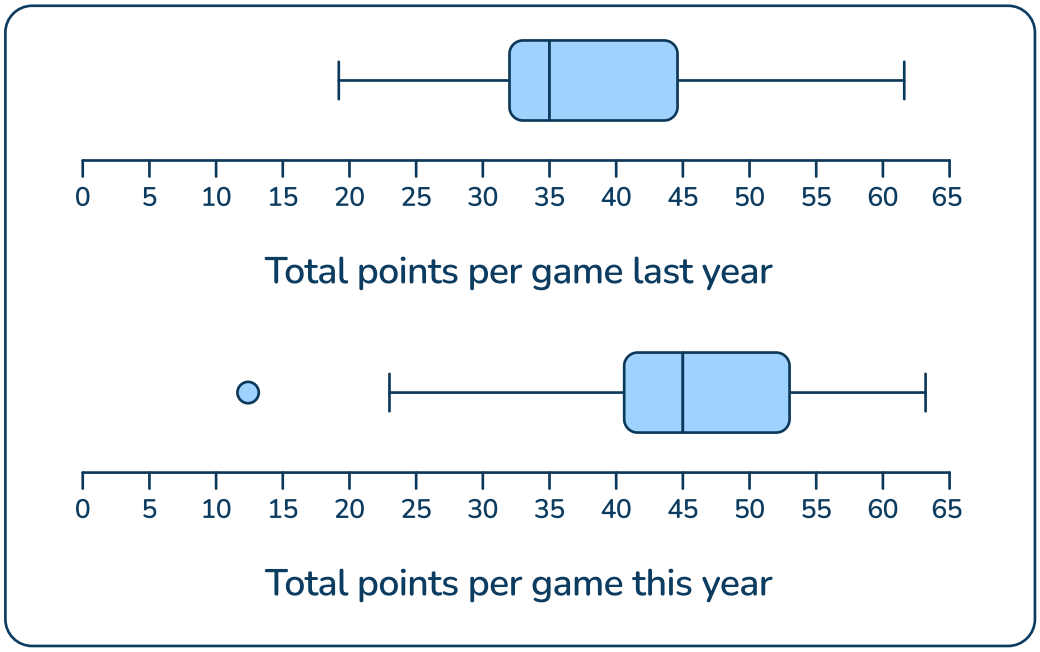
A. 78.54 ft
B. 39.27 ft
C. 16.485 ft
D. 65.94 ft

11 The table below shows the proportional relationship between x and y. What is the constant of proportionality?

x	y
3	13.5
5	22.5
6	27
9	40.5

A. 4
B. 6.5
C. 4.5
D. 2

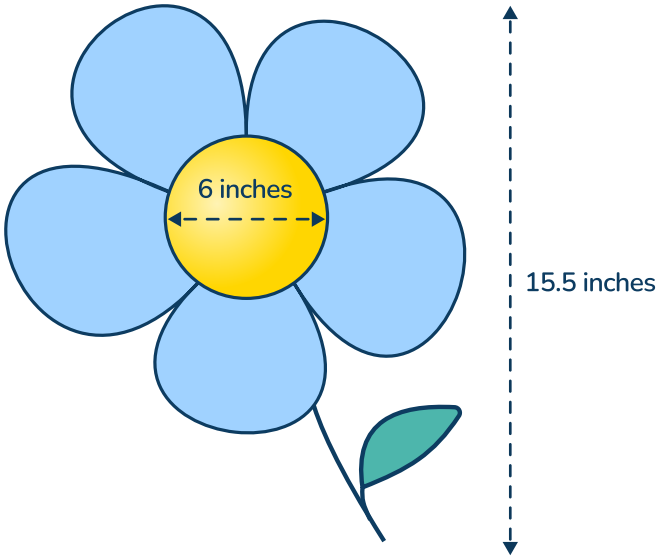
12 The two box plots show the total points per game for the school's basketball team last year and this year.



Rasheem says that on average, the team was better this year. Which statement about the box plot supports his conclusion?

A. There is an outlier of 10 from the games this year, but no outlier for last year.
B. All the games from this year scored more points than last year.
C. More than half of this year's games had more points than the top 25% of last year's.
D. The range for this year is larger than the range for last year.

13 Carsen owns a flower shop. He sends the drawing below to be designed for his business cards.



He asks the designer to design a flower that is $\frac{1}{5}$ the original size.
What will the area of the center of the flower be on the business card? Round to the nearest hundredth.

A. 1.13 inches²
B. 0.6 inches²
C. 21.50 inches²
D. 1.2 inches²

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14 The weather app indicates that the probability of snow tomorrow is 0.1.
Which word is the best description of the likelihood of snow tomorrow?

A. likely
B. unlikely
C. certain
D. impossible

15 Solve for r.

$\frac{1}{5}r + 2 \geq -4$

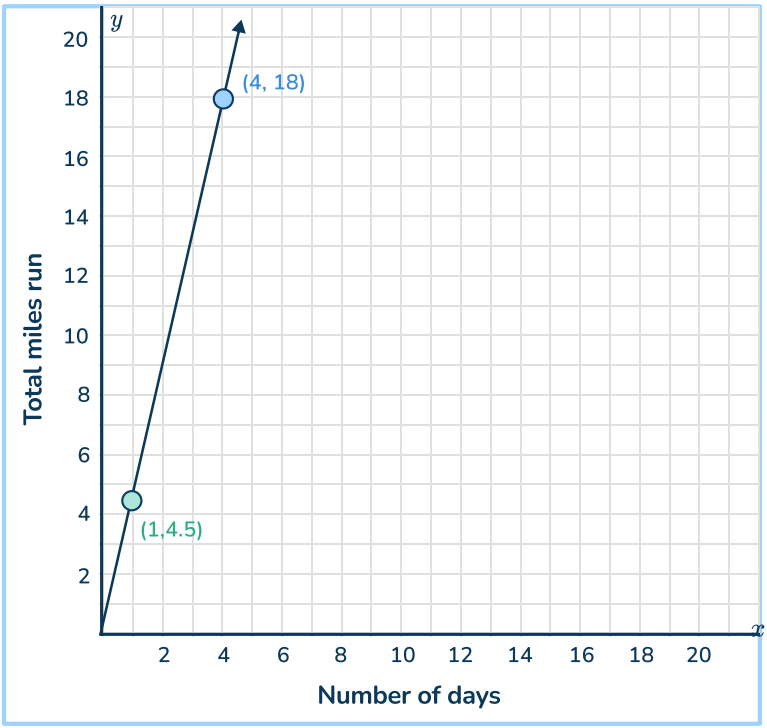
A. $r \geq -30$

B. $r \geq \frac{3}{5}$

C. $r \geq 3\frac{1}{5}$

D. $r \geq 5$

16



Which statements about the graph are true? Select all the correct answers.

A. The relationship between days and the total miles run is proportional.

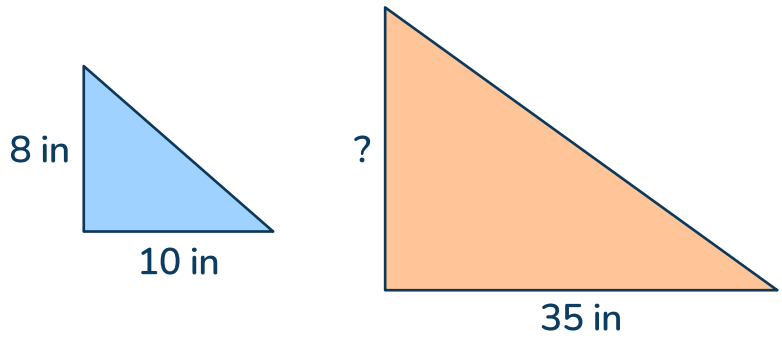
B. The point (1, 4.5) is the unit rate per day.

C. The point (3, 12.5) is a point on the line.

D. The point (4, 18) shows that after 4 days, the total number of miles run is 18.

E. As the total miles run increases by 1, the days increase by 4.5.

17 The orange triangle is a scaled version of the blue triangle. What is the missing height?



A. 3.5 in
B. 28 in
C. 25.5 in
D. 25 in

---

18 Which table shows a proportional relationship between x and y?

A.

x	0	1	2	3
y	0	2	3	4

B.

x	2	4	5	6
y	6	12	18	24

C.

x	1	2	4	8
y	2	4	8	16

D.

x	0	3	4	7
y	1	6	8	14

19 What is the value of the expression?

$$\frac{3 + \frac{1}{3} \div 2 - 1.6^2}{-5 \times 3}$$

A. 0.144
B. –0.04617
C. $-0.040\overline{4}$
D. 0.366

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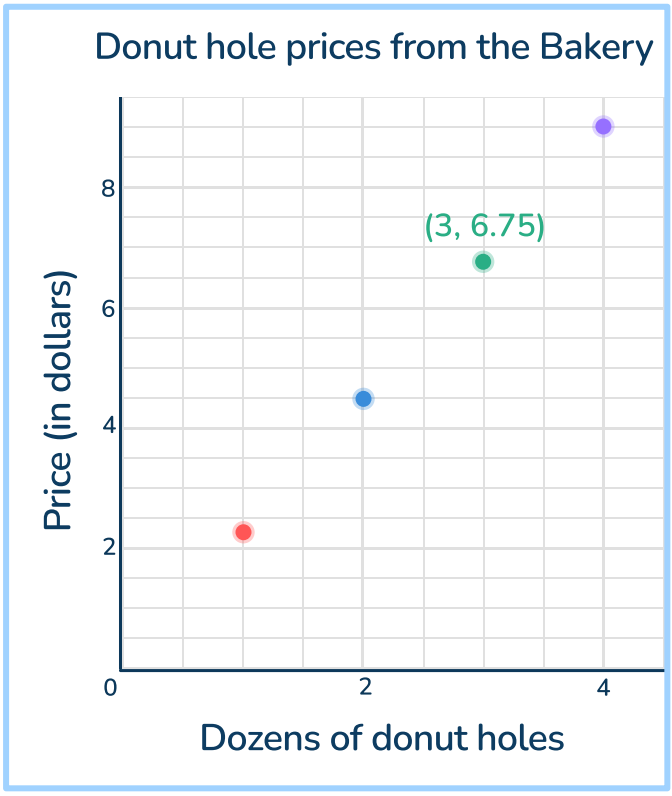
20 Luka bought 3 games at the same price. Luka went to the store with $72 and left with $12.50. Choose the equation and solution that represents the cost of each game, g.

A. $72 - 3g = 12.50$, $g = 19.83$
B. $3g - 72 = 12.50$, $g = 28.16$
C. $3g - 12.50 = 72$, $g = 19.83$
D. $72 - 12.50g = 3$, $g = 5.52$

21 What does point (3, 6.75) mean in the context of the graph below?



A. 6.75 donut holes cost $3
B. 6.75 dozen donut holes cost $3
C. 3 dozen donut holes cost $6.75
D. 3 donut holes cost $6.75

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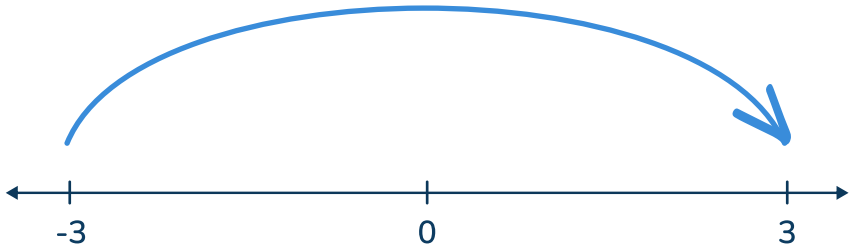
22 Which expression is equivalent to -32x - 8?

A. –8 (4x + 1)
B. 9 (4x + 1)
C. –8 (–4x + 1)
D. 3 (8x – 1)

23 Which equations are shown by the number line? Select all the correct answers.



A. –3 + –3 = –3
B. 3 + (–3) = 0
C. 3 – (–6) = 3
D. –3 + 6 = 3
E. –3 – (–6) = 6

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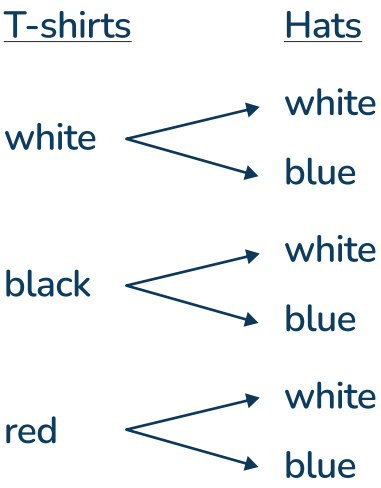
24 Horacio is six years older than his brother Jose. Jose is twice the age of their sister Deena. Which equation(s) show the relationship between Horacio's age, h, and Deena's age, d. Select all the correct answers.

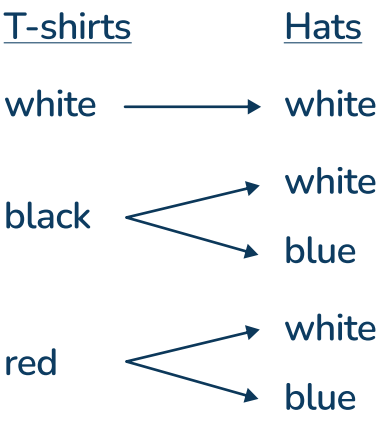
A. $\frac{h-6}{2} = d$
B. $12 + 2h = d$
C. $2d + 6 = h$
D. $2(h + 6) = d$
E. $2(d + 6) = h$

25 There are 3 colors of t-shirts and 2 colors of hats.
T-shirts: White, black, red
Shoes: white, blue
Which is the correct sample space for all possible combinations of t-shirts and hats?

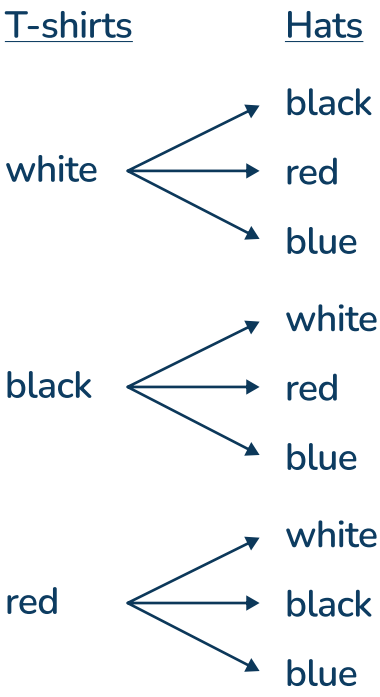
A.



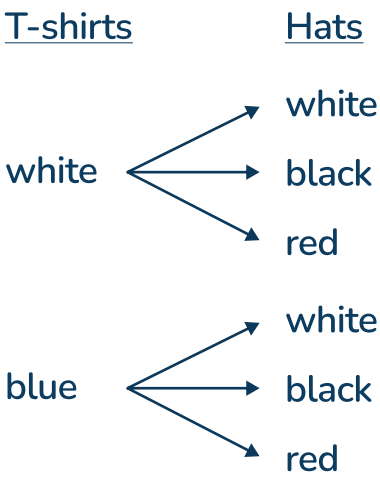
B.



C.



D.



26 Paul runs $6\frac{1}{2}$ miles in $1\frac{1}{4}$ hours. What is his average speed in miles per hour?

A. $7\frac{1}{10}$ mph

B. 6 mph

C. $5\frac{1}{5}$ mph

D. $6\frac{2}{5}$ mph

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27 Lilliana 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: -5 + 7.2
- Expression b: -7.2 -(-5)

A. Yes, because subtracting is the same as adding the opposite.
B. Yes, because the expressions have the same numbers.
C. No, because you cannot subtract a larger number from a smaller one.
D. No, because the terms in each expression are opposites.

28 Tracey and Joey were comparing the price of bananas, b, to pineapples, p.

Tracey's equation: $p = b + 0.2b$
Joey's: 1.2b = p

Which statement about the equations is correct?

A. Joey's equation shows that bananas cost 120% more than pineapples.
B. Tracey's equation shows pineapples cost 20% more than bananas.
C. Joey's equation shows that pineapples cost 1.2% more than bananas.
D. Tracey's equation shows that pineapples cost 2% more.

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29 The equation $12.25x = y$ models the cost, in dollars, for a child's fair ticket. The table models the cost, y, for an adult fair ticket.

x	3	5	6
y	\$51.00	\$85.00	\$102.00

Which comparison statement is true?

A. 1 adult ticket costs \$14.75 more than 1 child ticket
B. 1 child ticket costs \$4.75 more than 1 adult ticket
C. 1 child ticket and 1 adult ticket cost \$14.75
D. 1 adult ticket costs \$4.75 more than 1 child ticket

30 Evaluate the following expression: $(-7)(0.2)(\frac{3}{4})$

A. –1.05
B. 1.05
C. 2.7
D. –2.7

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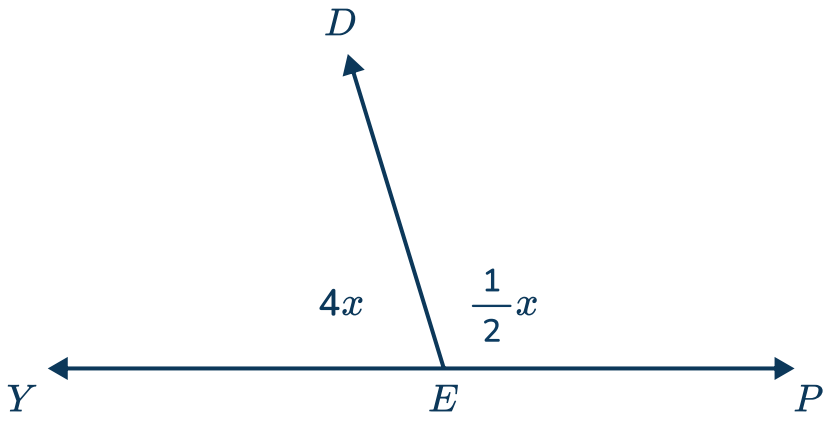
31 The figure shows line YP and two angles formed by ray ED. Solve for x.



A. 144
B. 40
C. 72
D. 180

32 Erica bought two pairs of sunglasses for $32.99 each. She also bought a bag of chips for $4. What was the total cost, including a 7% sales tax?

A. $65.98
B. $70.60
C. $74.88
D. $69.98

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33 A tree farm sold 12 pecan trees this week, leaving 25 pecan trees at the tree farm. What was the percent change in pecan trees at the tree farm this week?

A. 70%
B. 200%
C. 32%
D. 68%

34 Convert $\frac{3}{8}$ to a decimal.

A. 0.375
B. $0.\overline{3}$
C. 0.3
D. 3.6

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35 There are three different colors of blocks in a bag. If the probability of getting purple is $\frac{1}{4}$ and the probability of getting green is $\frac{1}{3}$, what is the probability of getting orange?

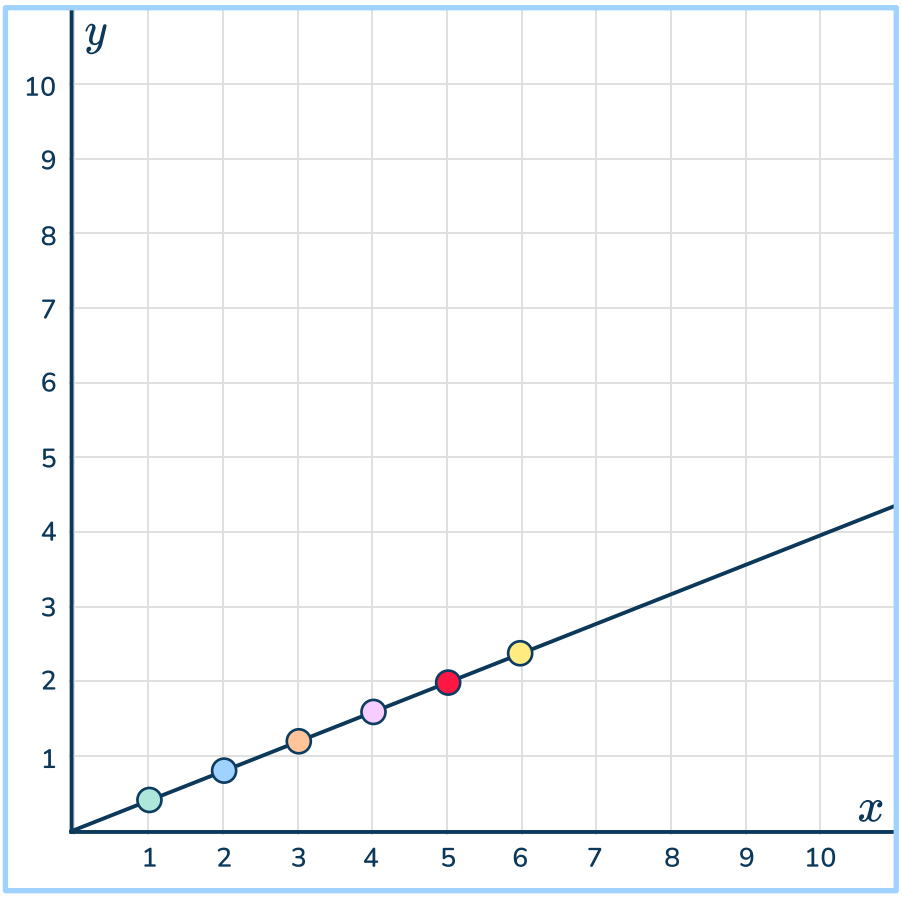
A. $\frac{7}{12}$

B. $\frac{3}{12}$

C. $\frac{4}{12}$

D. $\frac{5}{12}$

36



What is the constant of proportionality for the relationship shown in the graph?

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

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37 Which value is closest to the difference of $\frac{24}{50} - \frac{39}{40}$?

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

38 Noah sells brownies for $4 each. He has already sold 12 brownies, b. He wants to earn at least $60. Write an inequality to represent the situation.

A. $12b + 4 \geq 60$
B. $12b + 4 \leq 60$
C. $4b + 48 \leq 60$
D. $4b + 48 \geq 60$

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39 What is the equation shown by the table?

x	y
4	18.8
5	23.5
9	42.3

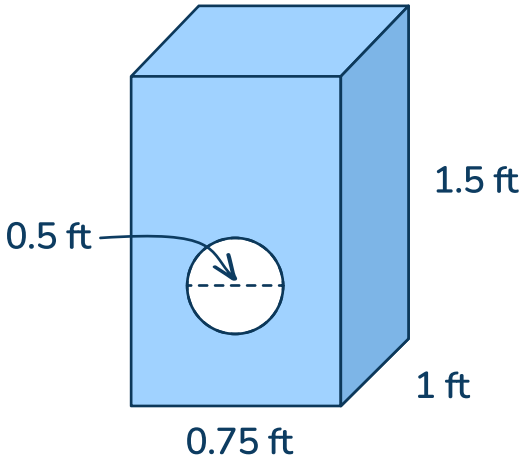
A. $14.8x = y$
B. $14.8 + x = y$
C. $4.7x = y$
D. $4.7 + x = y$

40 Kristie earns $22.50 per hour and works 40 hours per week. Kristie is paid every 2 weeks, and she puts 15% of her check into savings. How much money does Kristie save after 6 weeks?

A. $810
B. $900
C. $270
D. $1,800

Standard: 7.NS.3 7.G.4, 7.G.6, 7.RP.3
DOK 3
Extended Answer Response - 6 points

41 Celeste paints and sells birdhouses. The paint costs $25.99 a gallon and each gallon paints 400 square feet.



Part A: How many square feet of paint does Celeste use to paint 1 birdhouse? Explain how you solved it.

_____

_____

_____

_____

Part B: If Celeste has painted 8 bird houses, what percent of the gallon of paint has she used? Round to the nearest whole percent.

_____ %

Extended response - 6 points
Standard: 7.EE.4a, 7.EE.2, 7.EE.1
DOK 3

42 A doctor's office plans appointments from 8:00 am – 3:00 pm every 20 minutes per doctor. The office has 3 doctors.

Part A: Write an equation showing the total appointments left, a, given the hours passed in a day, h. Explain each part of the equation in context.

Equation 1: _____

_____

_____

_____

Part B: Write an equivalent equation that represents Part A in a different way. Explain each part of the equivalent equation in context. Then compare it to the first equation.

Equation 2: _____

_____

_____

_____

_____

_____

Answer Key - Multiple Choice

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

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

Item	KEY	Rationale
41	6 points	Student correctly calculates the surface area: • Top/bottom: 1 x 0.75 x 2 = 1.5 • Left/right side: 1.5 x 1 x 2 = 3 • Back side: 1.5 x 0.75 = 1.125 • Front side: 1.125 – (0.25² x 3.14) = 0.92875 • Total surface area: 1.5 + 3 + 1.125 + 0.92875 = 6.55375 ft² And the percent of paint left: 6.55375 ft² x 8 = 52.43 52.43 ÷ 400 = 0.131075 = 13% Student clearly explains how they found the surface area, including subtracting the area of the circular opening from the front side.
	5 points	Student correctly calculates the surface area: • Top/bottom: 1 x 0.75 x 2 = 1.5 • Left/right side: 1.5 x 1 x 2 = 3 • Back side: 1.5 x 0.75 = 1.125 • Front side: 1.125 – (0.25² x 3.14) = 0.92875 • Total surface area: 1.5 + 3 + 1.125 + 0.92875 = 6.55375 ft² And the percent of paint left: 6.55375 ft² x 8 = 52.43 52.43 ÷ 400 = 0.131075 = 13% Student explains how they found the surface area, but some parts of the explanation are incomplete or unclear.
	4 points	Student makes 1 calculation error for the surface area: • Top/bottom: 1 x 0.75 x 2 = 1.5 • Left/right side: 1.5 x 1 x 2 = 3 • Back side: 1.5 x 0.75 = 1.125 • Front side: 1.125 – (0.25² x 3.14) = 0.92875 • Total surface area: 1.5 + 3 + 1.125 + 0.92875 = 6.55375 ft² And/or the percent of paint left: 2.8575 ft² x 8 = 22.86 22.86 ÷ 400 = 0.05715 = 6% Student explains how they found the surface area, but some parts of the explanation are incomplete or unclear.

Item	KEY	Rationale
	3 points	Student makes 2 or 3 calculation errors for the surface area: • Top/bottom: 1 x 0.75 x 2 = 1.5 • Left/right side: 1.5 x 1 x 2 = 3 • Back side: 1.5 x 0.75 = 1.125 • Front side: 1.125 – (0.25² x 3.14) = 0.92875 • Total surface area: 1.5 + 3 + 1.125 + 0.92875 = 6.55375 ft² And the percent of paint left: 6.55375 ft² x 8 = 52.43 52.43 ÷ 400 = 0.131075 = 13% Student explains how they found the surface area, but some parts of the explanation are incomplete or unclear.
	2 points	Student makes more than 4 calculation errors for the surface area: • Top/bottom: 1 x 0.75 x 2 = 1.5 • Left/right side: 1.5 x 1 x 2 = 3 • Back side: 1.5 x 0.75 = 1.125 • Front side: 1.125 – (0.25² x 3.14) = 0.92875 • Total surface area: 1.5 + 3 + 1.125 + 0.92875 = 6.55375 ft² And the percent of paint left: 6.55375 ft² x 8 = 52.43 52.43 ÷ 400 = 0.131075 = 13% Student attempts to explain how they found the surface area, but some parts of the explanation are incomplete or unclear.
	1 point	Student makes more than 4 calculation errors for the surface area: • Top/bottom: 1 x 0.75 x 2 = 1.5 • Left/right side: 1.5 x 1 x 2 = 3 • Back side: 1.5 x 0.75 = 1.125 • Front side: 1.125 – (0.25² x 3.14) = 0.92875 • Total surface area: 1.5 + 3 + 1.125 + 0.92875 = 6.55375 ft² And the percent of paint left: 6.55375 ft² x 8 = 52.43 52.43 ÷ 400 = 0.131075 = 13% Student fails to explain how they found the surface area.
	0 point	Response is blank or does not include any correct calculations or explanations.

Item	KEY	Rationale

42	6 points	Student correctly creates two equations that model the situation and correctly explains and compares each part of the equation in context.
		• $63 - 9h = a$
		  • 63 is the total appointments in the office for 1 day and $9h$ is the number of appointments completed for each hour, h, that has passed
		• $3(31 - 3h) = a$
		  • 21 is the total appointments for each doctor and $3h$ is the number of appointments completed for each hour, h, per doctor. Multiplying by 3 shows that there are 3 doctors.
		• $9(7 - h) = a$
		  • 9 is the total appointments for each hour. 7 is the total hours of appointments in 1 day, therefore $7 - h$ is the hours passed.
		• $21 \times 3 - 3 \times 3h = a$
		  • 18 is the total appointments for each doctor and multiplying by 3 shows that there are 3 doctors. 3 is the number of appointments completed for each hour per doctor and multiplying by $3h$ shows that there are 3 doctors and h hours passed.
		• $3 \times 7 \times 3 - 3 \times 3h = a$
		  • 3 represents the appointments each hour per doctor. Multiplying by 7 shows that there are 7 hours of appointments each day and multiplying by 3 shows that there are 3 doctors. 3 is the number of appointments completed for each hour per doctor and multiplying by $3h$ shows that there are 3 doctors and h hours passed.
		• $\frac{60}{20} \times 7 \times 3 - \frac{60}{20} \times 3h = a$
		  • $\frac{60}{20}$ represents 60 minutes in 1 hour divided by 20-minute appointments. Multiplying by 7 shows that there are 7 hours of appointments each day and multiplying by 3 shows that there are 3 doctors. $\frac{60}{20} \times 3h$ shows the number of appointments per hour times 3 doctors and the hours passed, h.

	5 points	Student correctly creates two equations that model the situation and explains and compares each part of the equation in context, but some parts may be incomplete or unclear.

Item	KEY	Rationale
	4 points	Student creates two equations that model the situation with 1 error and explains and compares each part of the equation in context, but some parts may be incomplete or unclear.
	3 points	Student creates two equations that model the situation with 2 errors and attempts to explain and compare each part of the equation in context, but the explanation is incomplete or unclear.
	2 points	Student creates two equations with 2 errors OR only creates one equation. Students attempts to explain and compare each part of the equation in context, but the explanation is incomplete, unclear or incorrect.
	1 point	Student creates two equations with more than 2 errors OR only create one equation. The student attempts to explain and compare each part of the equation in context, but the explanation is incomplete, unclear or incorrect.
	0 point	Response is blank or does not include any correct calculations or explanations.

ANSWERS SORTED BY CCSS STRAND

RP			
2	D	**7.RP.1**	DOK 2
5	C	**7.RP.3, 7.EE.4**	DOK 2
6	C	**7.RP.2b**	DOK 2
11	C	**7.RP.2b**	DOK 1
16	A, B, D	**7.RP.2d, 7.RP.2a, 7.RP.2b**	DOK 2
18	C	**7.RP.2a**	DOK 1
21	C	**7.RP.2d**	DOK 1
26	C	**7.RP.1**	DOK 2
29	D	**7.RP.2b**	DOK 2
33	C	**7.RP.3**	DOK 2
36	A	**7.RP.2b**	DOK 1
39	C	**7.RP.2c**	DOK 2

EE			
3	A	**7.EE.1**	DOK 1
9	D	**7.EE.3**	DOK 1
15	A	**7.EE.4b**	DOK 1
20	A	**7.EE.4a**	DOK 2
22	A	**7.EE.1**	DOK 1
24	A, C	**7.EE.1, 7.EE.3, 7.EE.4**	DOK 2
28	B	**7.EE.2, 7.RP.3**	DOK 2
32	C	**7.EE.3, 7.RP.3**	DOK 2
38	D	**7.EE.4b**	DOK 2
40	A	**7.EE.3**	DOK 2
42	Extended Response	**7.EE.4a, 7.EE.2, 7.EE.1**	DOK 3

NS			
1	C	**7.NS.1c**	DOK 2
7	A, C	**7.NS.2a, 7.NS.2b**	DOK 1
8	D	**7.NS.1a**	DOK 2
19	C	**7.NS.3**	DOK 1
23	C, D	**7.NS.1b, 7.NS.1c**	DOK 2
27	D	**7.NS.1b, 7.NS.1c**	DOK 3
30	A	**7.NS.2c**	DOK 1
34	A	**7.NS.2d**	DOK 1
37	B	**7.NS.1d**	DOK 2
41	Extended Response	**7.NS.3 7.G.4, 7.G.6, 7.RP.3**	DOK 3

G			
10	B	**7.G.4**	DOK 2
13	A	**7.G.1, 7.G.4**	DOK 2
17	B	**7.G.1, 7.RP.2b**	DOK 1
31	B	**7.G.5**	DOK 2
41	Extended Response	**7.NS.3 7.G.4, 7.G.6, 7.RP.3**	DOK 3

SP			
4	B	**7.SP.7**	DOK 2
12	C	**7.SP.3**	DOK 2
14	B	**7.SP.5**	DOK 1
25	A	**7.SP.8b**	DOK 1
35	D	**7.SP.7**	DOK 1

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Sherwood Forest Elementary, Washington

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