



**THIRD SPACE  
LEARNING**

# 7th Grade NY State Practice Math Test

New York Practice Test  
Grade 7

**Grade 7**

## Questions

Name: .....

Class: .....

Date: .....

Score: .....

**SESSION 1:****30 Multiple Choice****Standard: 7.RP.2.b****DOK 1**

- 1 Jill is a natural wildlife photographer. She takes the same amount of pictures each day for 8 days. The table below represents the total number of pictures she has after 8 days. How many pictures in total does Jill have on day 3?

Number of days	Total amount of pictures
2	76
5	190
8	304

- A. 38
- B. 152
- C. 114
- D. 304

**Standard: 7.NS.2c**

**DOK 1**

- 2 What is the value in simplest form?

$$\left(-\frac{3}{7}\right) \div \left(\frac{9}{14}\right)$$

A.  $-\frac{27}{98}$

B.  $\frac{27}{98}$

C.  $\frac{14}{21}$

D.  $-\frac{2}{3}$

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**Standard: 7.EE.2**

**DOK 1**

- 3 A bakery sells red velvet,  $v$ , cupcakes and chocolate cupcakes,  $c$ . Each cupcake costs \$3.00. If the expressions  $3v + 3c$  is used to determine the total price when a customer buys any number of red velvet cupcakes and chocolate cupcakes, then which of the following is an equivalent expression that can be used?

A.  $6vc$

B.  $6(v+c)$

C.  $3(v+c)$

D.  $3vc$

**Standard: 7.RP.1**

**DOK 1**

- 4 Bill runs  $9\frac{1}{2}$  miles in  $1\frac{1}{4}$  hours. What is his average speed in miles per hour?

A.  $7\frac{3}{5}$

B.  $6\frac{3}{5}$

C.  $7\frac{1}{5}$

D.  $6\frac{1}{5}$

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**Standard: 7.RP.3**

**DOK 2**

- 5 A pair of jeans that are originally \$84.00 are on sale for 20%. There is a 6% sales tax. How much will you pay for the jeans?

A. \$67.20

B. \$73.08

C. \$71.23

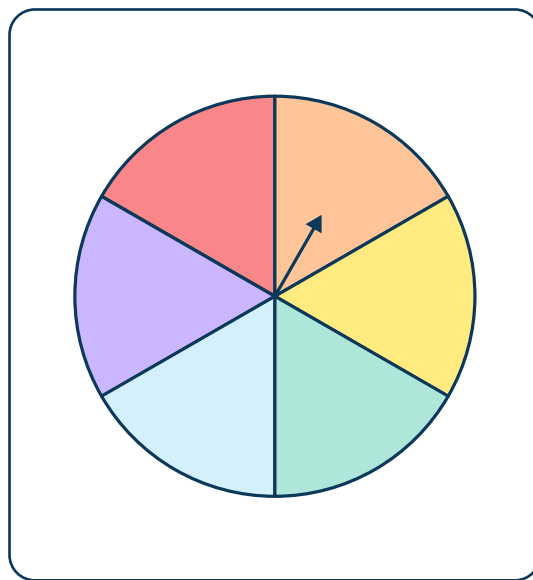
D. \$71.00



**Standard: 7.SP.C.7b****DOK 2**

- 6 The spinner below has 6 equal spaces. The table shows the experimental probability of 60 spins of the spinner. Based on the results, what is the experimental probability that on any one spin the spinner lands on green?

Color	Frequency
Red	8
Orange	12
Yellow	6
Green	17
Blue	10
Purple	7



- A.  $\frac{1}{6}$
- B.  $\frac{1}{17}$
- C.  $\frac{2}{17}$
- D.  $\frac{1}{10}$

**Standard: 7.EE.B.3**

**DOK 1**

7 What is the value of the expression,  $99 \div 11 - 2(7-3)^2$

- A. 23
  - B. -23
  - C. 21
  - D. -21
- 

**Standard: 7.RP.A.2b**

**DOK 1**

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

$x$	$y$
2	3.5
3	5.25
5	8.75
7	12.25

- A. 1.75
- B. 1.5
- C. 1.25
- D. 1

**Standard: 7.EE.A.1**

**DOK 1**

- 9 Which expression is equivalent to the expression below?

$$8 + 7(2x - 4)$$

- A.  $9x + 4$
- B.  $14x - 28$
- C.  $14x - 20$
- D.  $9x - 20$

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**Standard: 7.G.A.1**

**DOK 2**

- 10 Phil and Julie are taking a road trip. On the map, New York City and Boston are 2.5 inches apart. The map has a scale of 1 inch to 86 miles. How far apart, in miles, is New York City and Boston?

- A. 220 miles
- B. 34.4 miles
- C. 34 miles
- D. 215 miles

**Standard: 7.NS.A.3**

**DOK 1**

- 11** A house painter uses a total of 120 gallons of paint in 1 month. If  $\frac{2}{5}$  of the paint was used on painting trim, how many gallons of paint was used on painting trim in 1 month?

- A. 24 gallons
- B. 48 gallons
- C. 300 gallons
- D. 96 gallons

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**Standard: 7.RP.A.3**

**DOK 2**

- 12** Two sporting goods stores are having a holiday sale on kayaks. The original price of the kayak at both stores is \$205.
- Store A is having a 25% off sale and
  - Store B is having a 20% off sale.

How much more money will a customer pay for the Kayak if they go to Store B?

- A. \$164
- B. \$153.75
- C. \$10.25
- D. \$10.50

**Standard: 7.SP.C.5**

**DOK 2**

- 13** The weather app indicates that the probability of snow tomorrow is 0.83. Which word is the best description of the likelihood of snow tomorrow?

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

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**Standard: 7.EE.B.4b**

**DOK 2**

- 14** Kyle is saving to buy new wireless earbuds. The earbuds are \$170. Currently he has \$80 saved and just got a new job paying \$22 an hour. Which inequality can be used to calculate the amount of hours,  $x$ , Kyle has to work in order to have enough money?

A.  $80 + 22x < 170$   
B.  $80 + 22x = 170$   
C.  $22 + 80x \geq 170$   
D.  $80 + 22x \geq 170$

**Standard: 7.EE.A.1**

**DOK 2**

- 15** The expression below represents the perimeter of a square. Select the expression that represents the length of one of the sides of the square.

$$64x + 8y$$

- A.  $8x + y$
  - B.  $16x + 2y$
  - C.  $32x + 4y$
  - D.  $16x + 8y$
- 

**Standard: 7.RP.A.1**

**DOK 1**

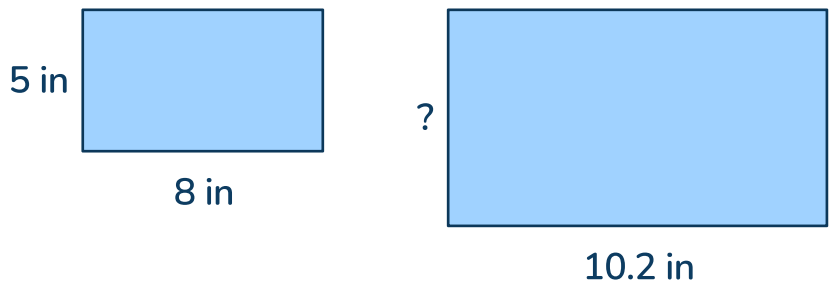
- 16** A baker uses  $1\frac{1}{2}$  tablespoons of cinnamon to make 3 dozen cookies. What is the unit rate in tablespoons per dozen?

- A.  $\frac{1}{2}$  tablespoons per dozen
- B. 1 tablespoon per dozen
- C.  $\frac{3}{2}$  tablespoons per dozen
- D.  $\frac{1}{3}$  tablespoons per dozen

Standard: 7.RP.A.2b

DOK 1

- 17 The rectangles below have proportional dimensions. What is the width of the larger rectangle?



- A. 6 in
- B. 3.9 in
- C. 4 in
- D. 6.375 in

Standard: 7.RP.A.2a

DOK 1

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

A.

$x$	$y$
2	5
4	10
8	19

C.

$x$	$y$
2	6
4	16
8	40

B.

$x$	$y$
2	6
4	12
8	24

D.

$x$	$y$
2	3
4	6
8	11

**Standard: 7.NS.A.1a**

**DOK 2**

- 19 Overnight, the temperature decreased by 4 degrees. If the original temperature was  $-1^{\circ}\text{F}$ . Which expression can be used to represent this situation?

- A.  $1 - 4$
  - B.  $-1 - 4$
  - C.  $-1 + 4$
  - D.  $1 - (-4)$
- 

**Standard: 7.NS.A.3**

**DOK 1**

- 20 What is the value of the expression?

$$\frac{2 + 9 \div 3 - (2)^2}{5 \times 2 + (-1)^2}$$

- A.  $\frac{10}{11}$
- B.  $\frac{10}{9}$
- C.  $\frac{1}{11}$
- D.  $\frac{1}{9}$



**Standard: 7.EE.B.3**

**DOK 2**

**21** What is  $\frac{1}{5}\%$  of  $[( - 0.45) \times (- \frac{3}{5})]$

A. 0.00054

B. 0.0054

C. 0.054

D. 0.54

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**Standard: 7.EE.B.3**

**DOK 1**

**22** Which value of  $x$  makes the equation true?  
 $2(x - 5) + 6 = \frac{1}{2}(6x - 18)$

A.  $x = -5$

B.  $x = 4$

C.  $x = -4$

D.  $x = 5$

**Standard: 7.SP.C.7b**

**DOK 2**

- 23** A bag contains red marbles, blue marbles and green marbles. The number of each of the marbles in the bag is as follows:
- 10 red marbles
  - 15 blue marbles
  - 25 green marbles

What is the probability that the marble selected is red or blue?

- A.  $\frac{1}{5}$
- B.  $\frac{3}{50}$
- C.  $\frac{1}{2}$
- D.  $\frac{3}{10}$
- 

**Standard: 7.NS.A.1c**

**DOK 1**

- 24** What value will make the equation true?

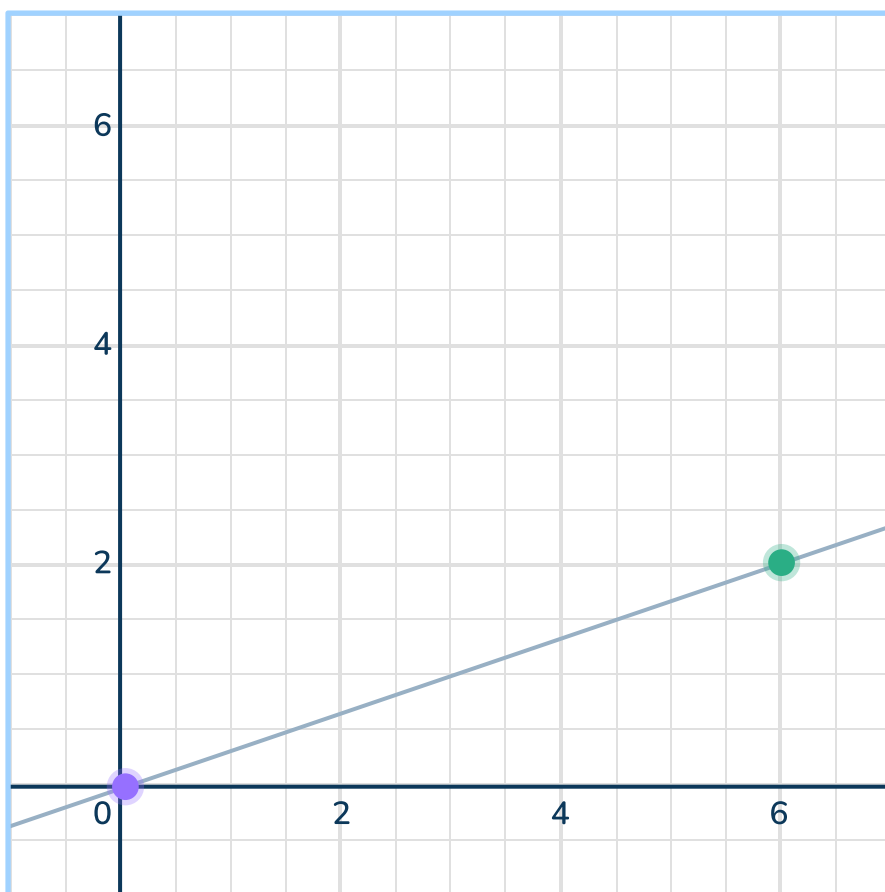
$$-2.5 - \underline{\hspace{1cm}} = -4\frac{1}{2}$$

- A. -2
- B. 2
- C. -2.5
- D. 2.5

Standard: 7.RP.A.2b

DOK 2

- 25 Use the graph below to determine the constant of proportionality.



- A. 6
- B. 3
- C.  $\frac{1}{6}$
- D.  $\frac{1}{3}$

**Standard: 7.EE.B.3**

**DOK 2**

- 26 A diner chef made 120 cups of chicken soup. The diner sold 40% of the soup. If a serving size is  $1\frac{1}{2}$  cups. How many servings were sold?

A. 48 servings  
B. 72 servings  
C. 32 servings  
D. 30 servings

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**Standard: 7.NS.A.1c**

**DOK 1**

- 27 Which expression has the same value as  $-\frac{4}{9} - \frac{3}{10}$ ?

A.  $-\frac{4}{9} + \frac{3}{10}$   
B.  $\frac{4}{9} + \frac{3}{10}$   
C.  $-\frac{4}{9} + (-\frac{3}{10})$   
D.  $-\frac{4}{9} - (-\frac{3}{10})$

**Standard: 6.SP.A.3**

**DOK 1**

- 28 The data below represents the temperature of 10 consecutive days in Miami.

78, 87, 90, 67, 78, 79, 83, 81, 90, 84

What is the median temperature over the 10 days?

- A. 82
  - B. 81
  - C. 83
  - D. 90
- 

**Standard: 7.RP.A.2c**

**DOK 2**

- 29 The cost for 16 ounces of strawberries is \$5.25. Which equation can be used to find the cost, in dollars, for 50 ounces of strawberries?

- A.  $\frac{16}{\$5.25} = \frac{50}{x}$
- B.  $\frac{16}{\$5.25} = \frac{x}{50}$
- C.  $\frac{1}{\$5.25} = \frac{x}{50}$
- D.  $\frac{1}{\$5.25} = \frac{50}{x}$

**Standard: 7.NS.A.1a**

**DOK 2**

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

- A. An overall change in temperature from  $12^{\circ}$  to  $-12^{\circ}$
- B. The total profit when someone buys something for \$100 and then sells it for \$100.
- C. A hot air balloon that goes from sea level to 34 feet above sea level.
- D. Temperature change of  $-5^{\circ}$  to  $3^{\circ}$ .

Session 2:

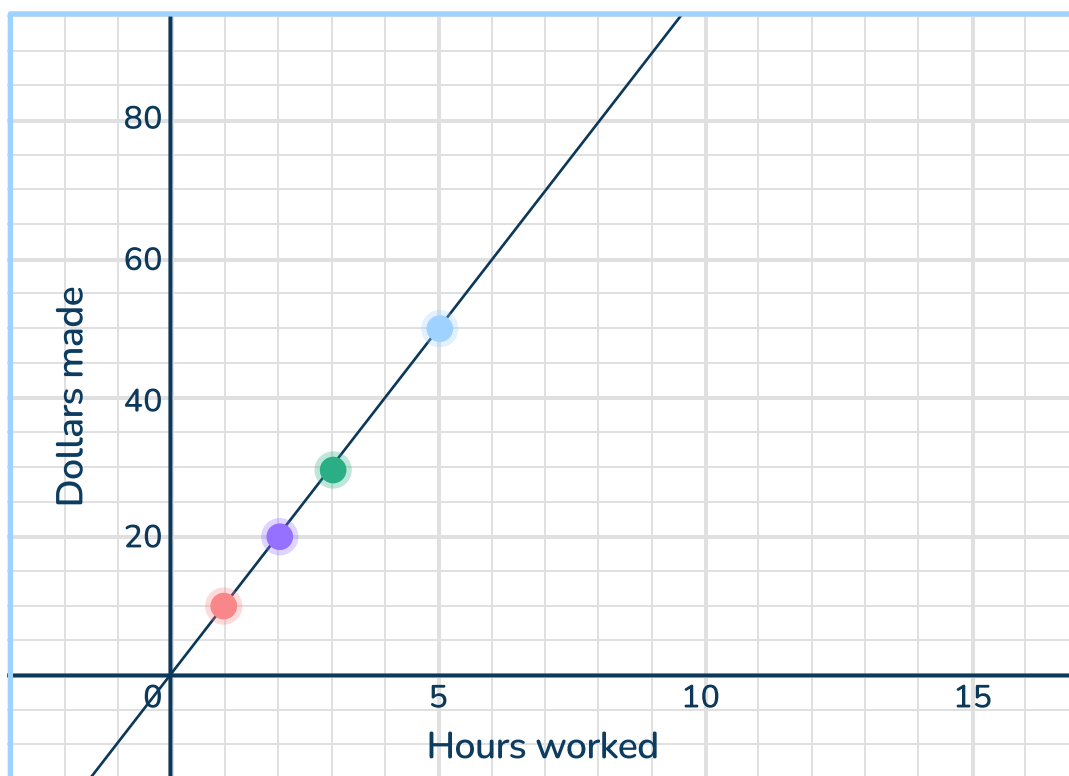
3 Multiple Choice

10 Constructed Response

Standard: 7.RP.2c

DOK 2

- 31 Natalie has a job for the holiday season waiting tables. The graph below shows the relationship between the number of hours she works and the amount of money she makes.

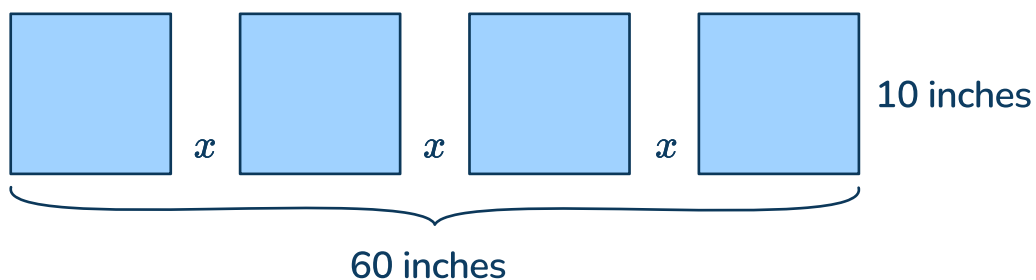


Which equation can be used to find the total amount of money (in dollars) she makes for every hour she works?

- A.  $y = 5x$
- B.  $y = 50x$
- C.  $y = 10x$
- D.  $y = 20x$

**Standard: 7.EE.4a****DOK 2**

- 32 Hazel is hanging 4 square picture frames on the wall. The space between each frame is the same. The frames are 10 inches by 10 inches and the space on the wall measures 10 inches by 60 inches. How far apart is each frame?



- A. 20 inches
- B. 6 inches
- C.  $6\frac{2}{3}$  inches
- D.  $13\frac{1}{3}$  inches



**Standard: 7.EE.3**

**DOK 2**

**33** Dena is going to the movie theater. She has only \$40 to spend at the theater. The ticket cost \$18. She also bought a small coke, medium popcorn, and a box of Swedish fish to share with a friend. The cost of the food is:

- Small coke = \$3.75
- Medium popcorn = \$12.50
- Box of Swedish fish = \$5.20

How much money will Dena have left?

- A. \$1.45
- B. \$0.55
- C. \$1.55
- D. \$0.45

**Constructed response questions:**

**Standard: 7.RP.2b**

**DOK 1**

**Constructed response - 1 point**

- 34** The table below shows a proportional relationship between the time traveled and the distance traveled of a car moving at a constant speed. What is the speed of the car?

Hours	Distance traveled
2	150 miles
4	300 miles
6	450 miles
8	600 miles

**Standard: 7.EE.1**

**DOK 2**

**Constructed response - 1 point**

- 35** Write the expression as the sum of two unlike terms.

$$\frac{1}{4} (8x - 16y) + 5y + x$$

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**Standard: 7.NS.3**

**DOK 2**

**Constructed response - 2 points**

- 36** Lori and Diana went for a jog every day for 7 days.

- Lori jogged  $3\frac{1}{4}$  miles each day.
- Diana jogged  $4\frac{1}{2}$  miles each day.

How much further (in miles) did Diana jog at the end of 7 days than Lori?

**Standard: 7.EE.B.4a**

**DOK 3**

**Constructed response - 2 points**

- 37** Linda spent a total of \$1400 for 3 tickets to the Eras Tour at MetLife Stadium and for parking. The cost of the tickets were the same including tax. She also spent \$50 to park. Write an equation that can be used to determine,  $c$ , the cost in, dollars of each ticket, including tax. Use the equation to find the cost of 1 ticket, including the tax.
- 

**Standard: 7.SP.8b**

**DOK 3**

**Constructed response - 2 points**

- 38** A student tosses a fair coin with heads (H) on one side and tails (T) on the other, and rolls a fair number cube with eight faces that are numbered 1 through 8. How many different outcomes are possible? Show your work by showing all different outcomes.

**Standard: 7.NS.1b**

**DOK 3**

**Constructed response - 2 point**

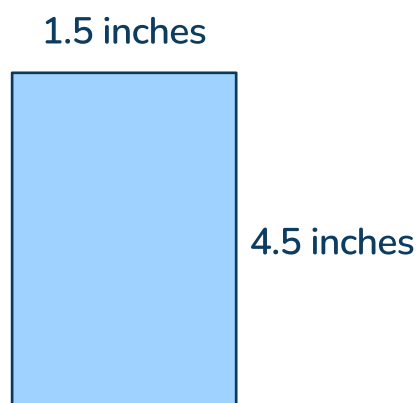
- 39 The temperature in Anchorage, Alaska on Monday night was  $-15^{\circ}$ . Tuesday morning the temperature increased by  $8^{\circ}$  and then Tuesday night it decreased by  $3^{\circ}$ . Wednesday morning the temperature increased by  $6^{\circ}$ . What was the temperature Wednesday morning? Be sure to show all of your work.
- 

**Standard: 7.G.1**

**DOK 3**

**Constructed Response - 2 points**

- 40 A drawing of a rectangular table top is shown below. The drawing has a scale of 1 inch to 1.5 feet. What is the area of the actual table top model?



**Standard: 7.NS.A.2b**

**DOK 3**

**Constructed response - 2 points**

- 41** A student incorrectly simplifies the expression below. In which step did the student make the first mistake? Make the correction and simplify the expression.

$$\frac{2}{5} (10 - 15) + 8 \div 2$$

- Step 1:  $\frac{2}{5} (5) + 8 \div 2$
  - Step 2:  $2 + 8 \div 2$
  - Step 3:  $2 + 4$
  - Step 4: 6
- 

**Standard: 7.RP.A.2b**

**DOK 3**

**Constructed response - 2 points**

- 42** Dillion is a speed reader. He reads 105 pages in 7 minutes. If the number of pages he reads is proportional to time, in minutes, what is the unit rate? How many pages will he read in 1 hour?

**Standard: 7.RP.3**

**DOK 4**

**Constructed Response - 3 points**

**43** Train A and Train B offer travel discounts to the same destination. The original price of the tickets are below.

- Train A has a 25% discount to the \$115 ticket.
- Train B offer  $\frac{1}{3}$  off of the original price of \$120 ticket.

Which train offers the better deal? Show all of your work to receive full points. Be sure to include the discounted ticket price for each train in your answer.

## Answer Key - Multiple Choice

Item number	Correct answer	Standard(s)	Depth of Knowledge
1	C	7.RP.2b	1
2	D	7.NS.2c	1
3	C	7.EE.2	1
4	A	7.RP.1	1
5	C	7.RP.3	2
6	B	7.SP.C.7b	2
7	B	7.EE.B3	1
8	A	7.RP.A.2b	1
9	C	7.EE.A.1	1
10	D	7.G.A.1	2
11	B	7.NS.A.3	1
12	C	7.RP.A.3	2
13	A	7.SP.C.5	2
14	D	7.EE.B.4b	2
15	B	7.EE.A.1	2
16	A	7.RP.A1	1
17	D	7.RP.A.2b	1
18	B	7.RP.A.2a	1
19	B	7.NS.A.1a	2
20	C	7.NS.A.3	1



## New York Practice Test | Grade 7 | Answers

Item number	Correct answer	Standard(s)	Depth of Knowledge
21	A	7.EE.B.3	2
22	D	7.EE.B.3	1
23	C	7.SP.C.7b	2
24	B	7.NS.A.1c	1
25	D	7.RP.A.2b	2
26	C	7.EE.B.3	2
27	C	7.NS.A.1c	1
28	A	6.SP.A.3	1
29	A	7.RP.A.2c	2
30	B	7.NS.A.1a	2
31	C	7.RP.2c	2
32	C	7.EE.4a	2
33	B	7.EE.3	2
34	Answer on rubric	7.RP.2b	1
35	Answer on rubric	7.EE.1	2
36	Answer on rubric	7.NS.3	2
37	Answer on rubric	7.EE.B.4a	3
38	Answer on rubric	7.SP.8b	3
39	Answer on rubric	7.NS.1b	3
40	Answer on rubric	7.G.1	3

## New York Practice Test | Grade 7 | Answers

Item number	Correct answer	Standard(s)	Depth of Knowledge
41	Answer on rubric	<b>7.NS.A.2b</b>	3
42	Answer on rubric	<b>7.RP.A.2b</b>	3
43	Answer on rubric	<b>7.RP.3</b>	4

Breakdown of Assessment				
Ratios & Proportional Relationships	Expressions, Equations, and Inequalities	The Number System	Geometry	Statistics and Probability
33%	28%	23%	5%	12%

## Rationales

Item	KEY	Rationale
1	A is incorrect	Students may choose this answer because they realize that she takes 38 pictures per day.
	B is incorrect	Students may choose this answer because it's how many total pictures she has on day 4.
	C is correct	This is the correct answer because $3 \times 38 = 114$ or $38 + 38 + 38 = 114$ .
	D is incorrect	Students may choose this answer because it's how many total pictures she has at the end of the 8 days.

Item	KEY	Rationale
2	A is incorrect	Students may choose this answer if they cannot recall how to divide fractions.
	B is incorrect	Students may choose this answer if they cannot recall how to divide fractions.
	C is incorrect	Students may choose this answer if they think a negative number times a positive number is positive and if they do not simplify the fraction completely.
	D is correct	<p>This is the correct answer.</p> $(-\frac{3}{7}) \div (\frac{9}{14})$ $(-\frac{3}{7}) \times \frac{14}{9} = -\frac{42}{63} = -\frac{2}{3}$

Item	KEY	Rationale
3	A is incorrect	A student may choose this answer if they think $6vc$ is equivalent to summing and if they struggle with equivalent expressions.
	B is incorrect	A student may choose this answer if they think they have to add $3+3$ before factoring it out.
	C is correct	This is the correct answer. $3v + 3c = 3(v + c)$
	D is incorrect	A student may choose this answer if they struggle with equivalent expressions.

Item	KEY	Rationale
4	A is correct	This is the correct answer, $9\frac{1}{2} \div 1\frac{1}{4} = 7\frac{3}{5}$
	B is incorrect	Students may choose this answer if they make a calculation error.
	C is incorrect	Students may choose this answer if they make a calculation error.
	D is incorrect	Students may choose this answer if they make a calculation error.

## New York Practice Test | Grade 7 | Rationales

Item	KEY	Rationale
5	A is incorrect	Students may choose this answer if they forget to add on the sales tax.
	B is incorrect	Students may choose this answer if they take the tax of the original price.
	C is correct	This is the correct answer. $84 \times 0.80 = 67.20$ $67.20 \times 0.06 = 4.032$ $67.20 + 4.032 = 71.232 = \$71.23$
	D is incorrect	Students may choose this answer if they round the answer.

Item	KEY	Rationale
6	A is incorrect	Students may choose this answer if they struggle with understanding experimental probability.
	B is correct	This is the correct answer because through the experiment the spinner landed on green 17 times.
	C is incorrect	Students may choose this answer if they struggle with understanding experimental probability.
	D is incorrect	Students may choose this answer if they struggle with understanding experimental probability.

## New York Practice Test | Grade 7 | Rationales

Item	KEY	Rationale
7	A is incorrect	Students may choose this answer if they struggle with integers and order of operations. The correct answer is -23 not 23.
	B is correct	This is the correct answer. $99 \div 11 - 2(7-3)^2$ $99 \div 11 - 2(16)$ $99 \div 11 - 32$ $9 - 32 = -23$
	C is incorrect	Students may choose this answer if they struggle with integers and order of operations. For example if they subtract 2 from 11 first, instead of doing the parentheses and then the division.
	D is incorrect	Students may choose this answer if they struggle with integers and order of operations. For example if they subtract 2 from 11 first, instead of doing the parentheses and then the division.

Item	KEY	Rationale
8	A is correct	This is the correct answer. The constant rate between x and y is 1.75. $2 \times 1.75 = 3.5$ $3 \times 1.75 = 5.25$ $5 \times 1.75 = 8.75$ $7 \times 1.75 = 12.25$
	B is incorrect	Students may choose this answer if they struggle with decimal operations and the concept of constant of proportionality.
	C is incorrect	Students may choose this answer if they struggle with decimal operations and the concept of constant of proportionality.
	D is incorrect	Students may choose this answer if they struggle with decimal operations and the concept of constant of proportionality.

## New York Practice Test | Grade 7 | Rationales

Item	KEY	Rationale
9	A is incorrect	Students may choose this answer if they struggle with simplifying expressions and the distributive property. Distribution means to multiply not add.
	B is incorrect	Students may choose this answer if they struggle with combining like terms.
	C is correct	This is the correct answer. $8 + 7(2x - 4)$ $8 + 14x - 28$ $14x - 20$
	D is incorrect	Students may choose this answer if they struggle with simplifying algebraic expressions and with distribution. Distribution means to multiply not add.

Item	KEY	Rationale
10	A is incorrect	Students may choose this answer if they make a calculation error.
	B is incorrect	Students may choose this answer if they struggle with making the comparison between the numbers by creating the wrong proportion.
	C is incorrect	Students may choose this answer if they struggle with making the comparison between the numbers by creating the wrong proportion.
	D is correct	This is the correct answer. Comparing inches to miles. $\frac{1}{86} = \frac{2.5}{x}$ $215 = x$ 215 miles

Item	KEY	Rationale
11	A is incorrect	Students may choose this answer if they do not have a strong command of multiplying fractions.
	B is correct	This is the correct answer. $120 \times \frac{2}{5} = 48$
	C is incorrect	Students may choose this answer if they divide instead of multiply.
	D is incorrect	Students may choose this answer if they make a calculation error.

Item	KEY	Rationale
12	A is incorrect	Students may choose this answer because it is the price of the kayak at Store B.
	B is incorrect	Students may choose this answer because it is the price of the kayak at Store A.
	C is correct	This is the correct answer. Price of kayak at Store A = \$153.75 Price of kayak at Store B - \$164 $164 - 153.75 = 10.25$ \$10.25 is how much more a customer will pay for the kayak
	D is incorrect	A student may choose this answer if they make a calculation error.



Item	KEY	Rationale
13	A is correct	This is the correct answer. A probability of 0.83 indicates an 83% chance which is likely.
	B is incorrect	A student may choose this answer because 0.83 is a good chance but not certain.
	C is incorrect	Students may choose this answer if they struggle with understanding probability.
	D is incorrect	Students may choose this answer if they struggle with understanding probability.

Item	KEY	Rationale
14	A is incorrect	Students may choose this answer if they are unsure of which symbol means greater than or less than.
	B is incorrect	Students may choose this answer if they think the question is asking for an equation.
	C is incorrect	Students may choose this answer if they confuse which is the constant and which is the rate of change.
	D is correct	This is the correct answer. 80 dollars plus 22 times the amount of hours is greater than or equal to the price of the earbuds.

Item	KEY	Rationale
15	A is incorrect	Students may choose this answer if they struggle with dividing expressions and understanding that a square has 4 equal sides.
	B is correct	This is the correct answer. $\frac{64x + 8y}{4} = 16x + 2y$
	C is incorrect	Students may choose this answer if they divide the expression by 2.
	D is incorrect	Students may choose this answer if they do not divide the entire expression by 4.

Item	KEY	Rationale
16	A is correct	This is the correct answer. $1\frac{1}{2} \div 3$ $\frac{3}{2} \div 3$ $\frac{3}{2} \div \frac{1}{3} = \frac{1}{2} \text{ tablespoons per dozen}$
	B is incorrect	Students may choose this answer if they struggle with finding unit rate.
	C is incorrect	Students may choose this answer if they struggle with finding unit rate.
	D is incorrect	Students may choose this answer if they struggle with finding unit rate.

Item	KEY	Rationale
17	A is incorrect	Students may choose this answer if they round the length of the width.
	B is incorrect	Students may choose this answer if they compare the dimensions incorrectly.
	C is incorrect	Students may choose this answer if they compare the dimensions incorrectly.
	D is correct	<p>This is the correct answer.</p> $\frac{5}{8} = \frac{?}{10.2}$ <p>The missing dimension (width) is 6.375 inches</p>

Item	KEY	Rationale
18	A is incorrect	Students may choose this answer if they struggle with identifying proportional relationships.
	B is correct	<p>This is the correct answer.</p> <p>In each case, the x value is being multiplied by 3 resulting in a proportional relationship.</p>
	C is incorrect	Students may choose this answer if they struggle with identifying proportional relationships.
	D is incorrect	Students may choose this answer if they struggle with identifying proportional relationships.

Item	KEY	Rationale
19	A is incorrect	Students may choose this answer if they struggle with interpreting integers in a real world situation.
	B is correct	This is the correct answer. The original temperature minus 4 degrees. -1-4
	C is incorrect	Students may choose this answer if they struggle with interpreting integers in a real world situation.
	D is incorrect	Students may choose this answer if they struggle with interpreting integers in a real world situation.

Item	KEY	Rationale
20	A is incorrect	Students may choose this answer if they struggle with order of operations with rational numbers.
	B is incorrect	Students may choose this answer if they struggle with order of operations with rational numbers.
	C is correct	This is the correct answer. $\frac{2 + 9 \div 3 - (2)^2}{5 \times 2 + (-1)^2} = \frac{2 + 3 - 4}{10 + 1} = \frac{5-4}{11} = \frac{1}{11}$
	D is incorrect	Students may choose this answer if they struggle with order of operations with rational numbers.

Item	KEY	Rationale
21	A is correct	<p>This is the correct answer.</p> $\frac{1}{5} \% \text{ of } [(-0.45) \times (-\frac{3}{5})]$ $\frac{1}{5} \% \text{ of } (-0.45 \times -0.60)$ $\frac{1}{5} \% \text{ of } (0.27)$ $0.002 \times 0.27$ $0.00054$
	B is incorrect	Students may choose this answer if they struggle with percents and decimal operations.
	C is incorrect	Students may choose this answer if they struggle with percents and decimal operations.
	D is incorrect	Students may choose this answer if they struggle with percents and decimal operations.

Item	KEY	Rationale
22	A is incorrect	Students may choose this answer if they do not have a strong command of solving equations.
	B is incorrect	Students may choose this answer if they do not have a strong command of solving equations.
	C is incorrect	Students may choose this answer if they do not have a strong command of solving equations.
	D is correct	<p>This is the correct answer.</p> $2(x - 5) + 6 = \frac{1}{2}(6x - 18)$ $2x - 10 + 6 = 3x - 9$ $2x - 4 = 3x - 9$ $-x = -5$ $x = 5$

Item	KEY	Rationale
23	A is incorrect	Students may choose this answer if they struggle with probability.
	B is incorrect	Students may choose this answer if they struggle with probability.
	C is correct	<p>This is the correct answer.</p> <p>prob of red = <math>\frac{10}{50}</math></p> <p>prob of blue = <math>\frac{15}{50}</math></p> <p>prob of selecting red and blue = <math>\frac{10}{50} + \frac{15}{50} = \frac{25}{50} = \frac{1}{2}</math></p>
	D is incorrect	Students may choose this answer if they struggle with probability.

Item	KEY	Rationale
24	A is incorrect	Students may choose this answer if they do not have a strong command of operations with rational numbers.
	B is correct	<p>This is the correct answer.</p> <p><math>-2.5 - 2 = -4.5</math></p> <p><math>-4.5 = -4\frac{1}{2}</math></p>
	C is incorrect	Students may choose this answer if they do not have a strong command of operations with rational numbers.
	D is incorrect	Students may choose this answer if they do not have a strong command of operations with rational numbers.

Item	KEY	Rationale
25	A is incorrect	A student might choose this answer if they struggle with determining the constant of proportionality from a graph.
	B is incorrect	A student might choose this answer if they struggle with determining the constant of proportionality from a graph.
	C is incorrect	A student might choose this answer if they struggle with determining the constant of proportionality from a graph.
	D is correct	This is the correct answer. Using the graph there is a constant rate of change from point to point. 2 units up and 6 units right which is 1 to 3 proportional relationship.

Item	KEY	Rationale
26	A is incorrect	Students may choose this answer if they do not divide by the serving size.
	B is incorrect	Students may choose this answer if they struggle with multiple step problems.
	C is correct	<p>This is the correct answer.</p> $120 \times 0.40 = 48$ <p>48 cups of soup were sold and a serving size is <math>1\frac{1}{2}</math></p> $48 \div 1\frac{1}{2}$ $48 \div \frac{3}{2}$ $48 \times \frac{2}{3} = 32$ <p>32 servings were sold.</p>
	D is incorrect	Students may choose this answer if they struggle with multiple step problems.

Item	KEY	Rationale
27	A is incorrect	Students may choose this answer if they do not have a strong command of rational number operations.
	B is incorrect	Students may choose this answer if they do not have a strong command of rational number operations.
	C is correct	This is the correct answer. $-\frac{4}{9} - \frac{3}{10} = -\frac{4}{9} + (-\frac{3}{10})$
	D is incorrect	Students may choose this answer if they do not have a strong command of rational number operations.

Item	KEY	Rationale
28	A is correct	This is the correct answer. Placing the numbers in order, 67, 78, 78, 79, 81, 83, 84, 87, 90, 90 81 and 83 are in the middle so add them and divide by 2. $81 + 83 = \frac{164}{2} = 82$
	B is incorrect	Students may choose this answer if they struggle with finding the median.
	C is incorrect	Students may choose this answer if they struggle with finding the median.
	D is incorrect	Students may choose this answer if they mix up median with mode.



## New York Practice Test | Grade 7 | Rationales

Item	KEY	Rationale
29	A is correct	This is the correct answer. The proportion makes the correct comparison of ounces to dollars.
	B is incorrect	Students may choose this answer if they struggle with making proportional comparisons.
	C is incorrect	Students may choose this answer if they struggle with making proportional comparisons.
	D is incorrect	Students may choose this answer if they struggle with making proportional comparisons.

Item	KEY	Rationale
30	A is incorrect	Students may choose this answer if they struggle with integers in real life scenarios.
	B is correct	This is the correct answer.  Gaining $-100 + 100 = 0$  No profit.
	C is incorrect	Students may choose this answer if they struggle with integers in real life scenarios.
	D is incorrect	Students may choose this answer if they struggle with integers in real life scenarios.

Item	KEY	Rationale
31	A is incorrect	Students may choose this answer if they struggle with determining the constant of proportionality from a graph.
	B is incorrect	Students may choose this answer if they struggle with determining the constant of proportionality from a graph.
	C is correct	This is the correct answer. Natalie makes \$10 for every hour she works as noted by the points on the graph and the line. (1, 10), (2, 20), (3, 30) (5, 50)
	D is incorrect	Students may choose this answer if they struggle with determining the constant of proportionality from a graph.

Item	KEY	Rationale
32	A is incorrect	Students may choose this answer if they do not divide the space by 3.
	B is incorrect	Students may choose this answer if they make a calculation error.
	C is correct	This is the correct answer. Each frame is 10 inches in width which means it is 40 inches of the 60 inches of wall space. There are 3 equal spaces in between the frames. So, $20 \div 3 = 6\frac{2}{3}$ Meaning that each space is $6\frac{2}{3}$ inches
	D is incorrect	Students may choose this answer if they make a calculation error.

## New York Practice Test | Grade 7 | Rationales

Item	KEY	Rationale
33	A is incorrect	Students may choose this answer if they do not have a strong command of solving multi-part questions.
	B is correct	<p>This is the correct answer.</p> $40 - 18 = 22$ <p>\$22 to buy food.</p> $3.75 + 12.50 + 5.20 = 21.45$ $22 - 21.45 = 0.55$ <p>There is \$0.55 left.</p>
	C is incorrect	Students may choose this answer if they do not have a strong command of solving multi-part questions.
	D is incorrect	Students may choose this answer if they do not have a strong command of solving multi-part questions.

Item	KEY	Rationale
34	1 point	The student correctly identifies the speed to be 75 mph.
	0 points	The student does not show an understanding of how to find the total volume.

Item	KEY	Rationale
35	1 point	<p>The student correctly simplifies the expression.</p> $\frac{1}{4}(8x - 16y) + 5y + x$ $2x - 4y + 5y + x$ $3x + y$
	0 points	The students do not demonstrate understanding.

## New York Practice Test | Grade 7 | Rationales

Item	KEY	Rationale
36	2 points	<p>To receive 2 points the student correctly does the calculations.</p> $\text{Lori} = 3\frac{1}{4} \times 7$ $\text{Lori} = 22\frac{3}{4} \text{ miles}$ $\text{Diana} = 4\frac{1}{2} \times 7$ $\text{Diana} = 31\frac{1}{2}$ $31\frac{1}{2} - 22\frac{3}{4} = 8\frac{3}{4} \text{ OR } 8.75$ <p>Diana jogged <math>8\frac{3}{4}</math> miles further than Lori.</p>
	1 point	To receive 1 point the student only calculates one of Lori or Diana's total distance correctly.
	0 points	The students do not demonstrate understanding.

Item	KEY	Rationale
37	2 points	<p>To receive 2 points the students have to correctly create the equation.</p> $c = (1400 - 50) \cdot 3$ <p><math>c = \\$450</math> for one ticket</p>
	1 point	<p>To receive 1 point the student only writes the equation and does not find the cost of 1 ticket. OR The student only finds the cost of 1 ticket and does not write an equation. OR The student does both with a minor error.</p>
	0 points	The student does not demonstrate understanding.

## New York Practice Test | Grade 7 | Rationales

Item	KEY	Rationale
38	2 points	<p>To receive 2 points, students need to show some variation of the following combinations and state that there are a total of 16 outcomes.</p> <p>H1    T1  H2    T2  H3    T3  H4    T4  H5    T5  H6    T6  H7    T7  H8    T8</p>
	1 point	Students will receive 1 point if they just put the answer 16 without demonstration.
	0 points	Students will receive 0 points if they leave the response blank, or if they do not write a correct expression or solve correctly.

Item	KEY	Rationale
39	2 points	<p>To receive 2 points. The student needs to show work and the correct answer.</p> <p><math>-15 + 8 = -7</math>  <math>-7 - 3 = -10</math>  <math>-10 + 6 = -4^\circ</math>  The temperature was <math>-4^\circ</math> Wednesday morning.</p>
	1 point	To receive 1 point the student made a minor calculation error or just put the correct answer with no work.
	0 points	The student does not demonstrate understanding.

Item	KEY	Rationale
40	2 points	<p>To receive 2 points.</p> <p>Student has to correctly calculate the dimensions of the actual model.</p> $\frac{\text{inches}}{\text{feet}} = \frac{1}{1.5} = \frac{1.5}{\text{width}}$ <p>width=2.25 feet</p> $\frac{\text{inches}}{\text{feet}} = \frac{1}{1.5} = \frac{4.5}{\text{length}}$ <p>length = 6.75 feet</p> <p><math>2.25 \times 6.75 = 15.1875</math> feet</p>
	1 point	<p>To receive 1 point. The student makes a minor calculation error in the conversion but calculates the area using the correct formula for area but using the wrong dimension.</p>
	0 points	<p>Students will receive 0 points if they leave the response blank, or do not demonstrate understanding.</p>

Item	KEY	Rationale
41	2 points	<p>To receive 2 points, students need to identify the step of the first mistake and make the correction.</p> <p>The mistake was first made in Step 1. <math>10 - 15</math> is <math>-5</math>.</p> <ul style="list-style-type: none"> <li>• Step 1: <math>\frac{2}{5}(-5) + 8 \div 2</math></li> <li>• Step 2: <math>-2 + 8 \div 2</math></li> <li>• Step 3: <math>-2 + 4</math></li> <li>• Step 4: <math>2</math></li> </ul>
	1 point	<p>Students will receive 1 point if they only state the step of the mistake and do not make correction.</p>
	0 points	<p>Students will receive 0 points if they leave the response blank, or cannot demonstrate understanding.</p>

## New York Practice Test | Grade 7 | Rationales

Item	KEY	Rationale
42	2 points	<p>To receive 2 points, students need to correctly find the unit rate and the amount of pages he reads in 1 hour.</p> <p><math>105 \div 7 = 15</math> pages per minute</p> <p><math>15 \times 60 = 900</math> pages in 1 hour</p>
	1 point	<p>Students will receive 1 point if they make a minor mistake in the calculation.</p> <p>OR</p> <p>Students only find the unit rate.</p>
	0 points	<p>Students will receive 0 points if they leave the response blank, or they do not demonstrate understanding.</p>

Item	KEY	Rationale
43	3 points	<p>To get 3 points, a student needs to calculate the correct discounted prices and describe which train offers the better deal.</p> <p>Train A: <math>115 \times 0.25 = 28.75</math> <math>115 - 28.75 = 86.25</math></p> <p>Train B: <math>120 \times \frac{1}{3} = 40</math> <math>120 - 40 = 80</math></p> <p>Train B is the better deal because it is \$6.25 cheaper.</p>
	2 points	<p>For students to get 2 points, they find the correct discounted prices but do not explain which is the better deal.</p> <p>OR</p> <p>Answer the question in full with a minor calculation error.</p>
	1 point	<p>For students to get 1 point, they understand how to solve the problem but make several calculation errors.</p>
	0 points	<p>Students will receive 0 points if they leave the response blank, or if they do not demonstrate understanding.</p>



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