



THIRD SPACE
LEARNING

7th Grade North Carolina State Practice Math Test

North Carolina Practice Test
Grade 7

Grade 7

Questions

Name:

Class:

Date:

Score:

No Calculator For Questions 1 - 15



1 Which expression has the greatest value when $y = \frac{1}{2}$?

A. $y - \frac{1}{3}$

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

C. $y - (-\frac{1}{3})$

D. $-\frac{1}{3} - y$

2 $\frac{2}{3}$ of a serving has $\frac{1}{6}$ of a cup of fruit. How many cups of fruit are in 1 serving?

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

B. 4

C. $\frac{1}{9}$

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

3 Which expression is equivalent to $3(x - 0.5) + 7.1 - 4.5x$?

- A. $-1.5x + 9.6$
 - B. $-7.5x + 5.6$
 - C. $-8.6 - 7.5x$
 - D. $5.6 - 1.5x$
-

4 Convert $\frac{4}{9}$ to a decimal.

- A. 0.444
 - B. $0.\overline{4}$
 - C. 0.49
 - D. 4.9
-

5 A watch that originally cost \$57.95 is on sale for 30% off. After the discount and the addition of a 6.5% sales tax. How much will you pay for the watch? Choose the equation representing the total cost, c .

- A. $57.95 \times 0.7 \times 1.065 = c$
- B. $57.95 \times 0.3 \times 0.065 = c$
- C. $57.95 \times 0.3 \times 0.65 = c$
- D. $57.95 \times 0.7 + 57.95 \times 1.065 = c$

- 6 A store sells 6 pairs of socks for \$7.98. They also sell 8 pairs of socks for \$10.88. What is the difference between the unit rates?

A. \$2.90 per pair
B. \$0.48 per pair
C. \$0.03 per pair
D. \$0.36 per pair

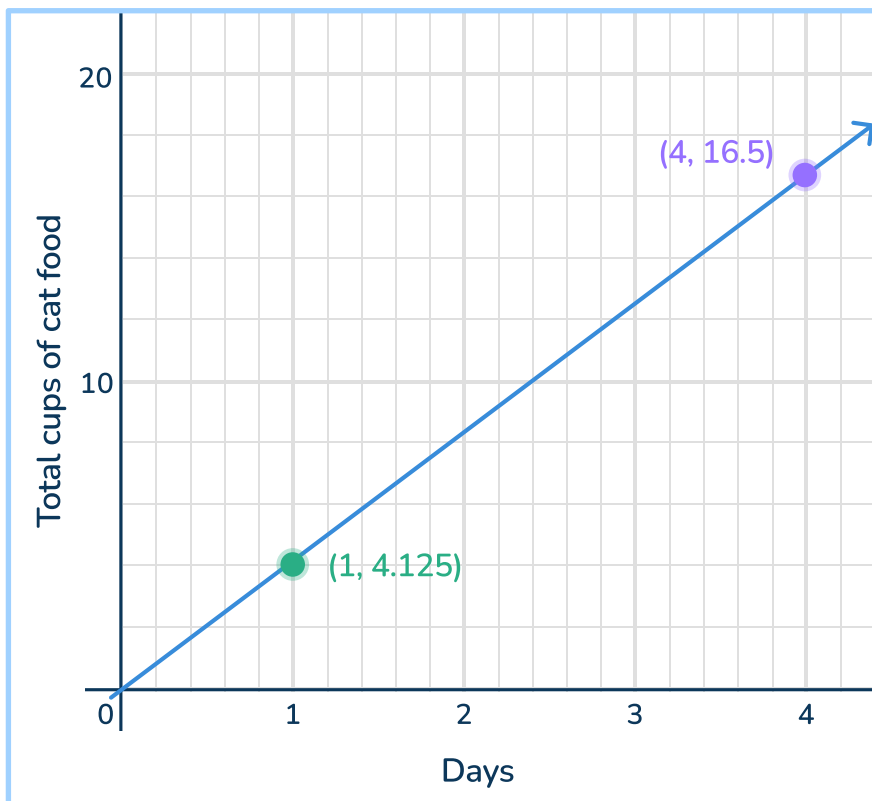
- 7 Which expression is equal to -36 ? Select all the correct answers.

A. $-2(-18)$
B. $\frac{-36}{-1}$
C. $108 \div (-3)$
D. $3 \times (-4) \times (-3)$

- 8 Which value is closest to the difference of $-\frac{12}{11} + \frac{29}{50}$?

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

9



Which statement about the graph is true?

- A. The relationship between days and total cups of cat food is proportional.
- B. The point (0, 0) is the unit rate per day.
- C. The point (4, 16.5) shows that 4 cups will last 16.5 days.
- D. The point (3, 12.75) is a point on the line.

10

Jazmin 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: $12 - 5.7$
- Expression B: $5.7 + (-12)$

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

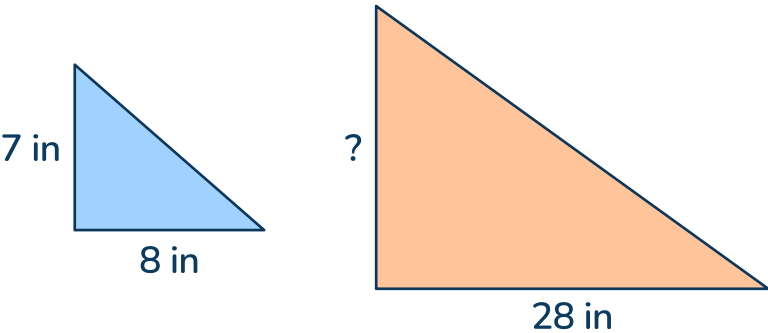
For questions 11–15, write your answers in the boxes given. In each box, write only one number or symbol.

11 A book store is having a sale. For every two magazines bought, the second one is 40% off. All magazines cost \$6.50. What is the price of 5 magazines?

Only 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ., –, and / are allowed in the answer box. Mixed numbers must be entered as an improper fraction or decimal.

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



Only 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ., –, and / are allowed in the answer box. Mixed numbers must be entered as an improper fraction or decimal.

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- 13 Evaluate the following expression: $(-9)(0.4)(\frac{3}{5})$

Only 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ., −, and / are allowed in the answer box. Mixed numbers must be entered as an improper fraction or decimal.

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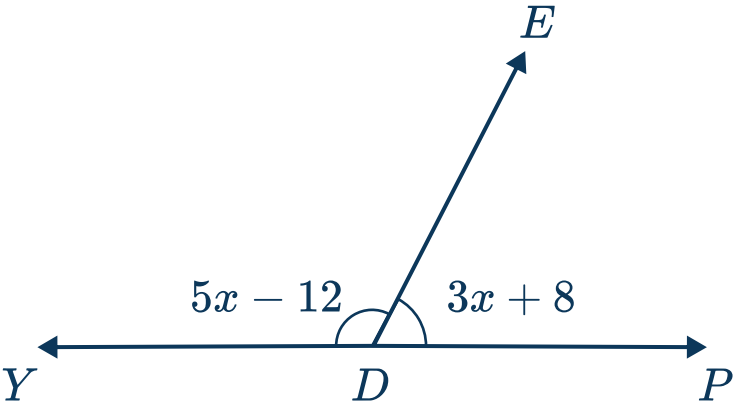
-
- 14 What is the value of the expression?

$$\frac{7 + 8 \div \frac{1}{2} - 4.4^2}{-5 \times 2}$$

Only 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ., −, and / are allowed in the answer box. Mixed numbers must be entered as an improper fraction or decimal.

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



Only 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ., −, and / are allowed in the answer box. Mixed numbers must be entered as an improper fraction or decimal.

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THIS IS THE END OF CALCULATOR INACTIVE QUESTIONS

THIS IS THE BEGINNING OF CALCULATOR ACTIVE QUESTIONS

Calculator Can Be Used For Questions 16 - 45



For questions 16–20, write your answers in the boxes given. In each box, write only one number or symbol.

16 Elias earns \$21.25 per hour and works 40 hours per week. Elias is paid every 2 weeks, and he puts 15% of his check into savings. How much money does Elias save after 6 weeks?

Only 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ., −, and / are allowed in the answer box. Mixed numbers must be entered as an improper fraction or decimal.

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17 Evaluate: $6\frac{1}{2} - (-2\frac{3}{4})$

Only 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ., −, and / are allowed in the answer box. Mixed numbers must be entered as an improper fraction or decimal.

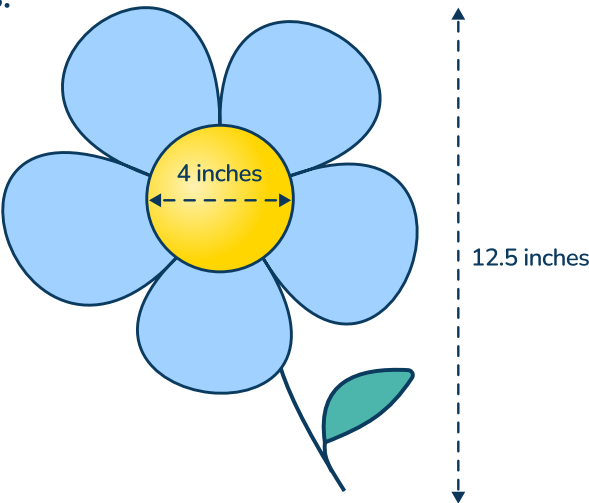
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18 A phone is charged to 100%. It uses $\frac{1}{25}$ of its charge, watching videos for $\frac{1}{2}$ of an hour. At this rate, how many hours of video can be watched until the phone has 0% charge?

Only 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ., −, and / are allowed in the answer box. Mixed numbers must be entered as an improper fraction or decimal.

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19 Davu 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.

Only 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ., −, and / are allowed in the answer box. Mixed numbers must be entered as an improper fraction or decimal.

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

Only 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ., −, and / are allowed in the answer box. Mixed numbers must be entered as an improper fraction or decimal.

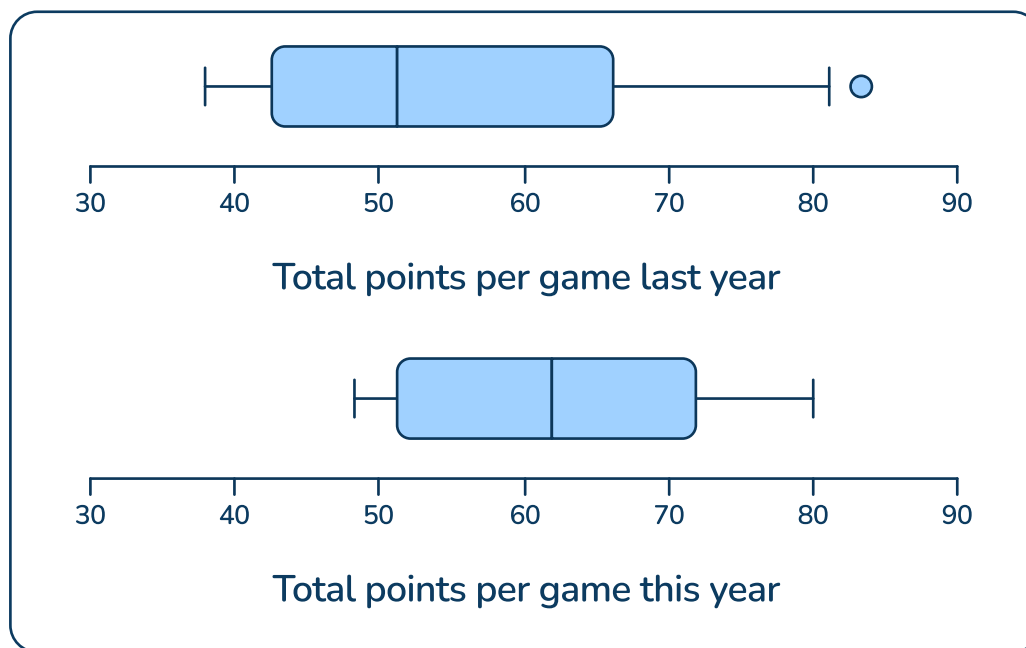
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21 The table below shows the proportional relationship between x and y . What is the constant of proportionality?

x	y
3	2.4
5	4
6	4.8
9	7.2

- A. 1.6
- B. 0.8
- C. 2.4
- D. 0.4

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



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

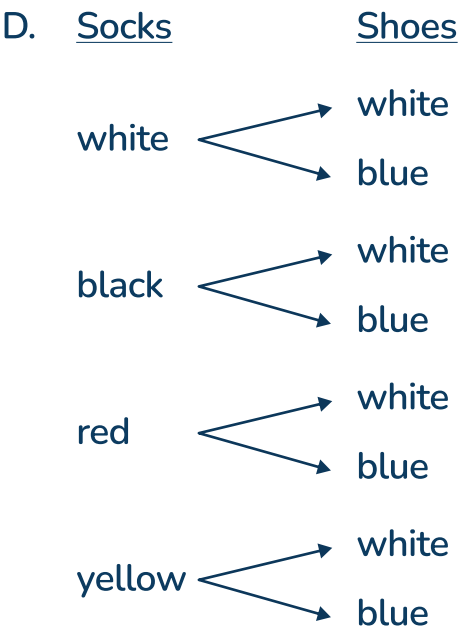
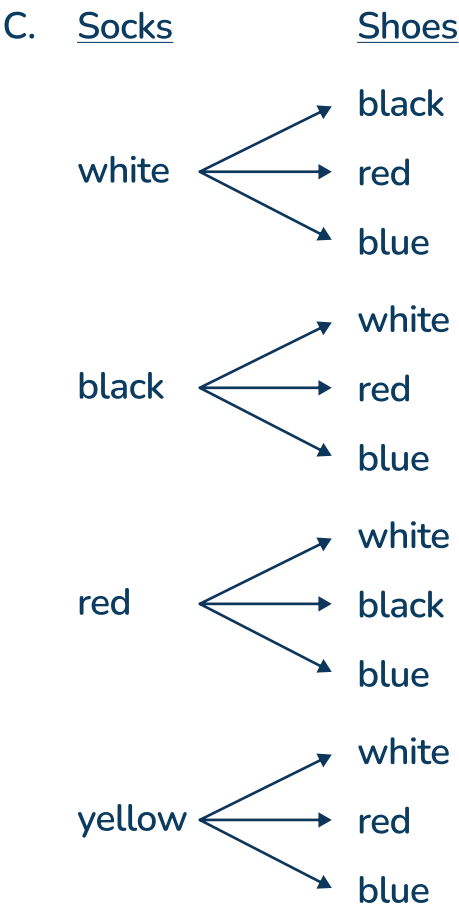
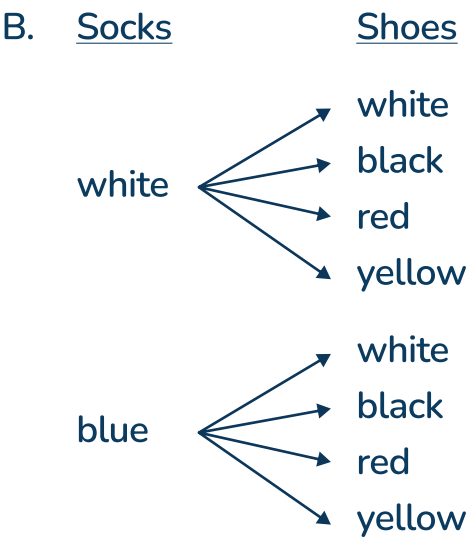
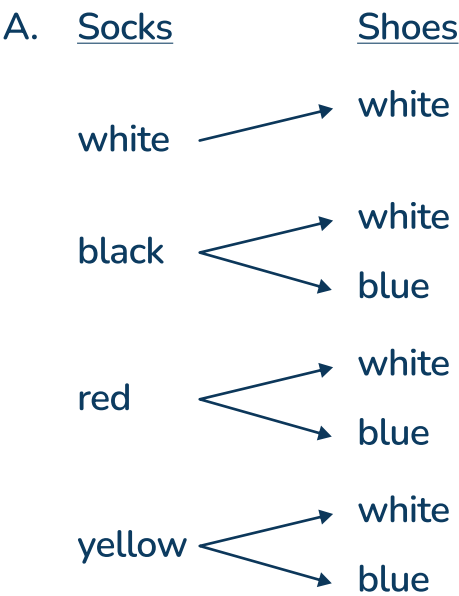
- A. There is an outlier in the games from last year, but no outlier for this year.
- B. All the games from this year scored more points than last year.
- C. This year's top 75% of game scores were in the same range as the top 50% of last year's.
- D. The range for last year is larger than the range for this year, meaning there is less variability.

23 There are 4 colors of socks and 2 colors of shoes.

Socks: white, black, red, yellow

Shoes: white, blue

Which is the correct sample space for all possible combinations of socks and shoes?



24 The weather app indicates that the probability of rain tomorrow is 0.7. Which word is the best description of the likelihood of rain tomorrow?

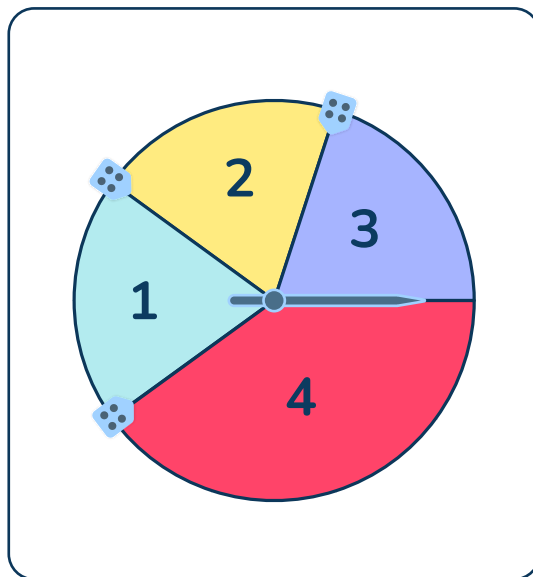
- A. likely
- B. unlikely
- C. certain
- D. impossible

25 Solve for r :

$$\frac{1}{5}r - 1 \geq -6$$

- A. $r \geq -5$
- B. $r \geq -25$
- C. $r \geq -35$
- D. $r \geq -20$

- 26 The spinner will be spun once.



Estimate the probability that the spinner will land on red.

- A. 20%
 - B. 30%
 - C. 40%
 - D. 50%
-
- 27 Manuela wants to survey the students at her middle school to see what their favorite sport is. Which sampling method will give random and representative data?
- A. Surveying random students as they eat lunch
 - B. Surveying all the students on the football and basketball team
 - C. Surveying 20 random student's in her math class
 - D. Surveying random students at the 6th grade dance

- 28 Nova and Leo were comparing the price of mangos, m , to papayas, p .
Nova's equation: $m = p + 0.3p$
Leo's: $1.3p = m$

Which statement about the equations is correct?

- A. Leo's equation shows that papayas cost 1.3% more than mangos.
- B. Nova's equation shows that papayas cost 3% more.
- C. Leo's equation shows that mangos cost 130% more than papayas.
- D. Nova's equation shows mangos cost 30% more than papayas.

-
- 29 The equation $8.5x = y$ models the cost, in dollars, for a small pizza. The table models the cost, y , for an extra large pizza.

x	3	5	6
y	\$67.65	\$112.75	\$135.30

Which comparison statement is true?

- A. 1 extra large pizza costs \$22.55 more than 1 small pizza
- B. 3 small pizzas costs less than 1 extra large pizza
- C. 1 small pizza costs \$42.15 less than 1 extra large pizza
- D. 1 extra large pizza and 1 small pizza cost a total of \$31.05

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

A.

x	0	2	3	6
y	0	3	6	9

B.

x	2	3	4	5
y	1	1.5	2	10

C.

x	4	5	10	8
y	14	17.5	35	28

D.

x	0	3	4	7
y	1	10	13	22

31 Aubrey bought 4 games at the same price. Aubrey went to the store with \$62 and left with \$15.80. Choose the equation and solution that represents the cost of each game, g .

- A. $62 - 4g = 15.80$, $g = 11.55$
- B. $4g - 62 = 15.80$, $g = 19.45$
- C. $4g + 15.80 = 62$, $g = 19.45$
- D. $62 - 15.80g = 4$, $g = 11.55$

32 Amanda bought two pairs of shoes for \$27.99 each. She also bought a pack of socks for \$6. What was the total cost, including a 7% sales tax?

- A. \$33.99
- B. \$36.37
- C. \$61.98
- D. \$66.32

33 An animal shelter adopted 18 pets this week, leaving 45 pets at the shelter. What was the percent change in pets at the shelter this week? Round to the nearest percent.

- A. 71%
- B. 40%
- C. 29%
- D. 25%

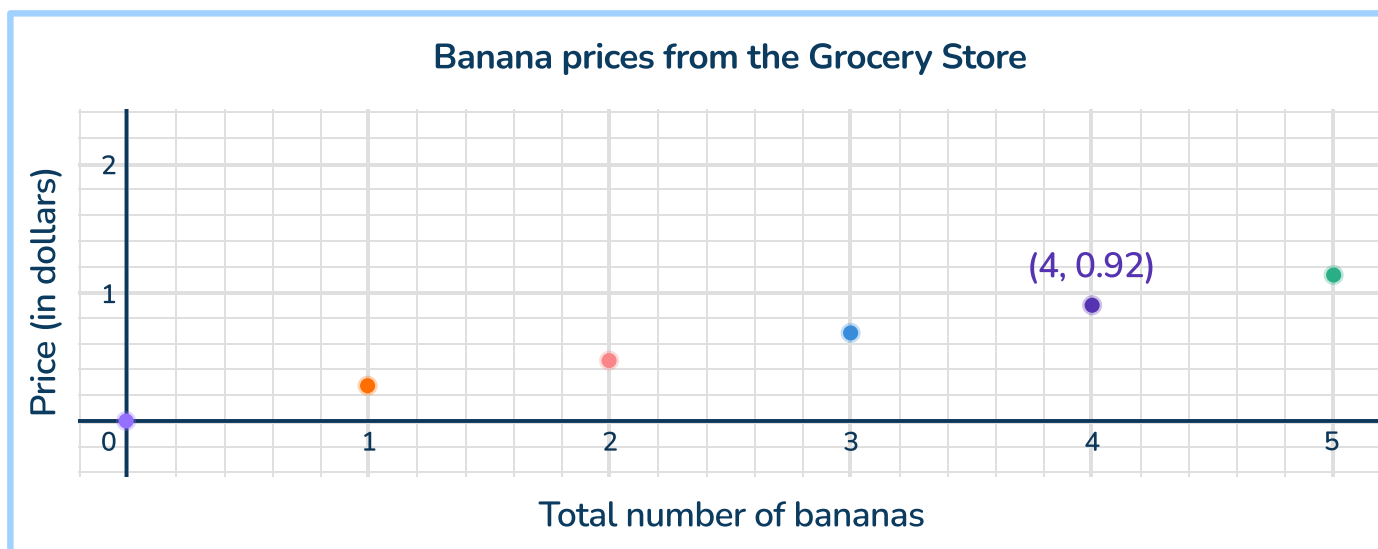
- 34 A bag contains red marbles, blue marbles and green marbles. The number of each of the marbles in the bag is as follows:

- 8 red marbles
- 12 blue marbles
- 4 green marbles

What is the probability that the marble selected is NOT green?

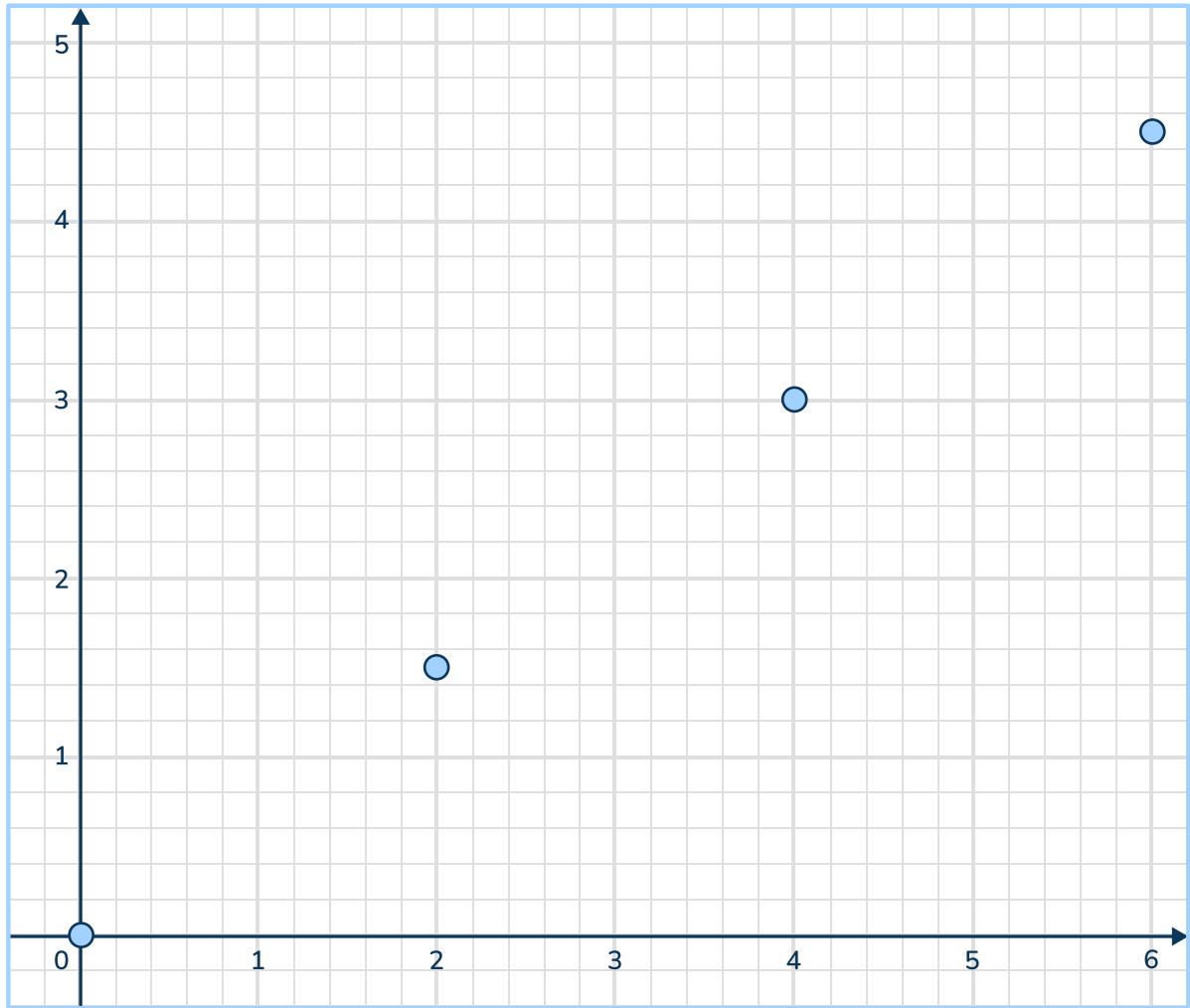
- A. $\frac{1}{6}$
- B. $\frac{5}{6}$
- C. $\frac{1}{5}$
- D. $\frac{4}{5}$

- 35 What does point (4, 0.92) mean in the context of the graph below?



- A. 4 bananas cost \$0.92
- B. 0.92 bananas cost \$4
- C. 4 pounds of bananas costs \$0.95
- D. 0.92 pounds of bananas cost \$4

36



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

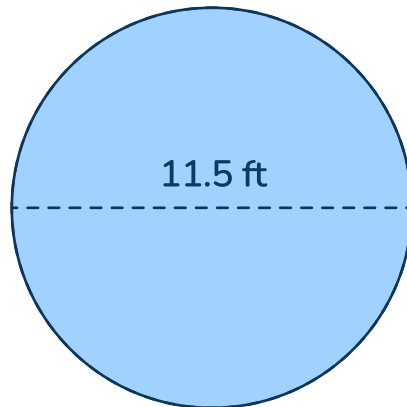
A. 1.5

B. $\frac{3}{4}$

C. 7.5

D. $\frac{1}{2}$

- 37 A school is building a new fence around their circular garden, shown in the diagram below.



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

- A. 36.13 ft
- B. 415.48 ft
- C. 18.06 ft
- D. 103.87 ft

-
- 38 Evelyn sells bracelets, b , for \$7 each. She has already sold 6 bracelets. She wants to earn at least \$90. Write an inequality to represent the situation.

- A. $7b + 6 \leq 90$
- B. $6b + 42 \leq 90$
- C. $6b + 7 \geq 90$
- D. $7b + 42 \geq 90$

39 What is the equation shown by the table?

x	y
4	19.8
6	29.7
11	54.45

- A. $9.9x = y$
 - B. $15.8 + x = y$
 - C. $4.95x = y$
 - D. $15.8 + x = y$
-

40 Which expression is equivalent to $-48x + 12$?

- A. $-4(12x - 3)$
- B. $12(4x - 1)$
- C. $6(-7x - 2)$
- D. $-3(16x + 4)$

- 41 George is three years older than his brother Silas. Silas is twice the age of their sister Jade. Which equation show the relationship between George's age, g , and Jade's age, j ?

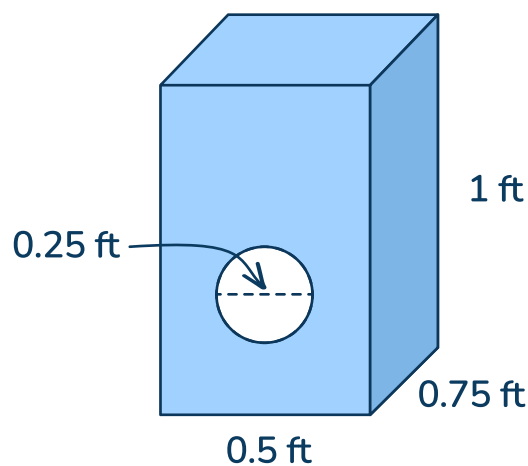
A. $\frac{g-3}{2} = j$

B. $2j - 3 = g$

C. $2(g + 3) = j$

D. $\frac{j+3}{2} = g$

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



How many square feet of paint does Celeste use to paint 1 birdhouse? Round to the nearest thousandth.

- A. 3.299
B. 1.625
C. 3.201
D. 1.576

43 There are three different colors of marbles in a bag. If the probability of getting blue is $\frac{1}{3}$ and the probability of getting yellow is $\frac{2}{7}$, what is the probability of getting red?

- A. $\frac{13}{21}$
- B. $\frac{8}{21}$
- C. $\frac{18}{21}$
- D. $\frac{1}{21}$

44 The table shows the number of books each student read during the last 5 months

Reese	Emma
12	9
10	8
9	14
21	20
13	27

Which statement correctly compares the mean absolute deviation for the students?

- A. Emma’s mean absolute deviation is about triple Reese’s
- B. Reese’s mean absolute deviation is about triple Emma’s
- C. Emma’s mean absolute deviation is about half Reese’s
- D. Reese’s mean absolute deviation is about half Emma’s

45 Hazel buys a toy for her dog. It is on sale for \$9. The original price was \$11.25. What is the percent discount of the dog toy?

- A. 20%
- B. 80%
- C. 25%
- D. 75%

Answer Key - Multiple Choice

Item number	Correct answer	Standard(s)	DOK
1	C	NC.7.NS.1	DOK 1
2	A	NC.7.RP.1	DOK 2
3	D	NC.7.EE.1	DOK 1
4	B	NC.7.NS.2c	DOK 1
5	A	NC.7.RP.3, NC.7.EE.4a	DOK 2
6	C	NC.7.RP.2b	DOK 2
7	C	NC.7.NS.2b	DOK 1
8	B	NC.7.NS.1	DOK 2
9	A	7.RP.2d	DOK 2
10	A	NC.7.NS.1	DOK 3
11	27.3 or 27.30	NC.7.EE.3	DOK 1
12	24.5	7.G.1	DOK 2
13	-2.16	NC.7.NS.2	DOK 1
14	-0.364	NC.7.NS.3	DOK 1
15	23	NC.7.G.5	DOK 2
16	765	NC.7.EE.3	DOK 2
17	$\frac{37}{4}$ or 9.25	NC.7.NS.1	DOK 2

North Carolina State Practice Math Test | Grade 7 | Answers

Item number	Correct answer	Standard(s)	DOK
18	12.5 or $\frac{25}{2}$	NC.7.RP.1	DOK 1
19	0.50 or $\frac{1}{2}$ *calculated with π button	NC.7.G.1, NC.7.G.4	DOK 1
20	$\frac{38}{5}$ or 7.6	NC.7.RP.1	DOK 2
21	B	NC.7.RP.2b	DOK 1
22	C	NC.7.SP.3	DOK 1
23	D	NC.7.SP.8	DOK 2
24	A	NC.7.SP.5	DOK 2
25	B	NC.7.EE.4b	DOK 1
26	C	NC.7.SP.7	DOK 2
27	A	NC.7.SP.1	DOK 3
28	D	NC.7.EE.2, NC.7.RP.3	DOK 2
29	D	NC.7.RP.2b	DOK 2
30	C	NC.7.RP.2a	DOK 1
31	A	NC.7.EE.4a	DOK 2
32	D	NC.7.EE.3, NC.7.RP.3	DOK 2
33	C	NC.7.RP.3	DOK 2
34	B	NC.7.SP.7	DOK 1
35	A	NC.7.RP.2d	DOK 1

North Carolina State Practice Math Test | Grade 7 | Answers

Item number	Correct answer	Standard(s)	DOK
36	B	NC.7.RP.2b	DOK 1
37	A	NC.7.G.4	DOK 2
38	D	NC.7.EE.4b	DOK 2
39	C	NC.7.RP.2c	DOK 2
40	A	NC.7.EE.1	DOK 1
41	A	NC.7.EE.4	DOK 2
42	C	NC.7.G.6	DOK 2
43	B	NC.7.SP.7	DOK 1
44	D	NC.7.SP.4	DOK 2
45	A	NC.7.RP.3	DOK 2

ANSWERS SORTED BY STRAND

RP			
2	A	NC.7.RP.1	DOK 2
5	A	NC.7.RP.3, NC.7.EE.4a	DOK 2
6	C	NC.7.RP.2b	DOK 2
9	A	7.RP.2d	DOK 2
18	12.5 or $\frac{25}{2}$	NC.7.RP.1	DOK 2
20	$\frac{38}{5}$ or 7.6	NC.7.RP.1	DOK 2
21	B	NC.7.RP.2b	DOK 1
29	D	NC.7.RP.2b	DOK 2
30	C	NC.7.RP.2a	DOK 1
33	C	NC.7.RP.3	DOK 2
35	A	NC.7.RP.2d	DOK 1
36	B	NC.7.RP.2b	DOK 1
39	C	NC.7.RP.2c	DOK 2
45	A	NC.7.RP.3	DOK 2

North Carolina State Practice Math Test | Grade 7 | Answers

NS			
1	B, E	7.EE.1	DOK 1
4	B	7.EE.3	DOK 1
7	D	7.EE.4b	DOK 1
8	A	7.EE.4a	DOK 2
10	B	7.EE.1	DOK 1
13	B, D	7.EE.1, 7.EE.3, 7.EE.4	DOK 2
14	B	7.EE.2, 7.RP.3	DOK 2
17	C	7.EE.3, 7.RP.3	DOK 2

EE			
3	D	NC.7.EE.1	DOK 1
11	27.3 or 27.30	NC.7.EE.3	DOK 1
16	765	NC.7.EE.3	DOK 2
25	B	NC.7.EE.4b	DOK 1
28	D	NC.7.EE.2, NC.7.RP.3	DOK 2
31	A	NC.7.EE.4a	DOK 2
32	D	NC.7.EE.3, NC.7.	DOK 2
38	D	NC.7.EE.4b	DOK 2
40	A	NC.7.EE.1	DOK 1
41	A	NC.7.EE.4	DOK 2

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G			
12	24.5	7.G.1	DOK 2
15	80	NC.7.G.5	DOK 2
19	0.50 or $\frac{1}{2}$ *calculated with button	NC.7.G.1, NC.7.G	DOK 2
37	A	NC.7.G.4	DOK 2
42	C	NC.7.G.6	DOK 2

SP			
22	C	NC.7.SP.3	DOK 2
23	D	NC.7.SP.8	DOK 1
24	A	NC.7.SP.5	DOK 1
26	C	NC.7.SP.7	DOK 2
27	A	NC.7.SP.1	DOK 2
34	B	NC.7.SP.7	DOK 2
43	B	NC.7.SP.7	DOK 1
44	D	NC.7.SP.4	DOK 2

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