



THIRD SPACE
LEARNING

7th Grade Indiana State Practice Math Test

Indiana Practice Test Grade 7

Grade 7

Questions

Name:

Class:

Date:

Score:

No Calculator For Questions 1 - 10



1

$-10 - y$

$y - 10$

$y - (-10)$

$10 - y$

Order the expressions from least to greatest for when $y = -50$.

Write the expressions on the blank lines.

_____ (least)

_____ (greatest)

2

Evaluate the following expression: $(-9)(0.4)(\frac{7}{8})$

Write your answer in the box.

Answer


- 3 An animal shelter adopted 30 pets this week, leaving 50 pets at the shelter. What was the percent change in pets at the shelter this week?

Write your answer in the box.

 Answer

-
- 4 Solve $-7.9 + (-5\frac{3}{8})$.

Write your answer in the box.

 Answer

- 5 A pair of shoes that originally cost \$72.00 are on sale for 35% off. After the discount, a 7% sales tax is added to the sale price. Choose the expressions that represent the total cost of the shoes. Select **all** the correct answers.

- A. $(72 \times 0.65) \times 1.07$
 - B. $72 \times 0.65 \times 0.07$
 - C. $72 \times 0.65 + 1.07$
 - D. $72 \times 0.35 + 66 \times 0.07$
 - E. $(72 - 72 \times 0.35) \times 1.07$
-

- 6 Which expressions are equal to $\frac{1}{2}$? Select **all** the correct answers.

- A. $\frac{\sqrt{256}}{-2^3}$
- B. $-\sqrt{400} \div (-\sqrt{100})$
- C. $\sqrt{25} \cdot \frac{1}{10}$
- D. $\frac{1}{\sqrt{4}}$
- E. $\frac{\sqrt{289}}{\sqrt{64}}$

7 Which expressions are equal to -36 ? Select all the correct answers.

A. $-6(-6)$

B. $72 \div (-2)$

C. $2 \times (-18)$

D. $\frac{-36}{-1}$

E. $3 \times (-4) \times (-3)$

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

A. The overall change in temperature from -20° to 20° .


B. The balance of an account after a \$20 payment, if the starting balance was $-\$20$.

C. Walking from a train platform that is -20 feet below sea level to the street above it.

D. A hot air balloon that goes from sea level to 20 meters above sea level.


9 Solve $-8.9 - (-12.6) = \underline{\hspace{2cm}}$

Write your answer in the box.

 Answer

10 Write 360's prime factorization using exponents.

Write your answer in the box.

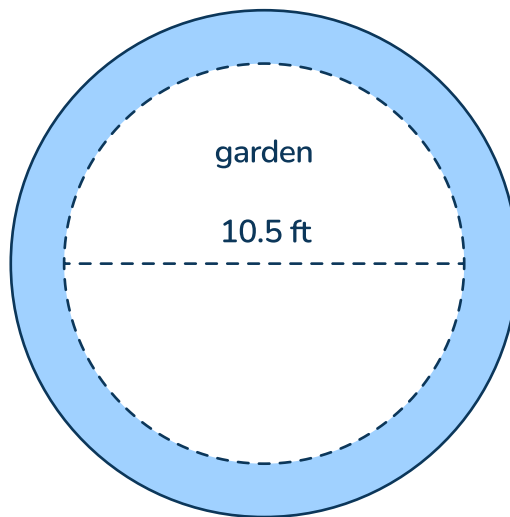
 Answer

Calculator Can Be Used For Questions 11 - 36




- 11 Area of a circle $= \pi r^2$ Circumference of a circle $= \pi d$

A school is building a new fence around their circular garden. The garden has a diameter of 10.5 feet. There will be a 1 foot gap between the edge of the garden and the fence.

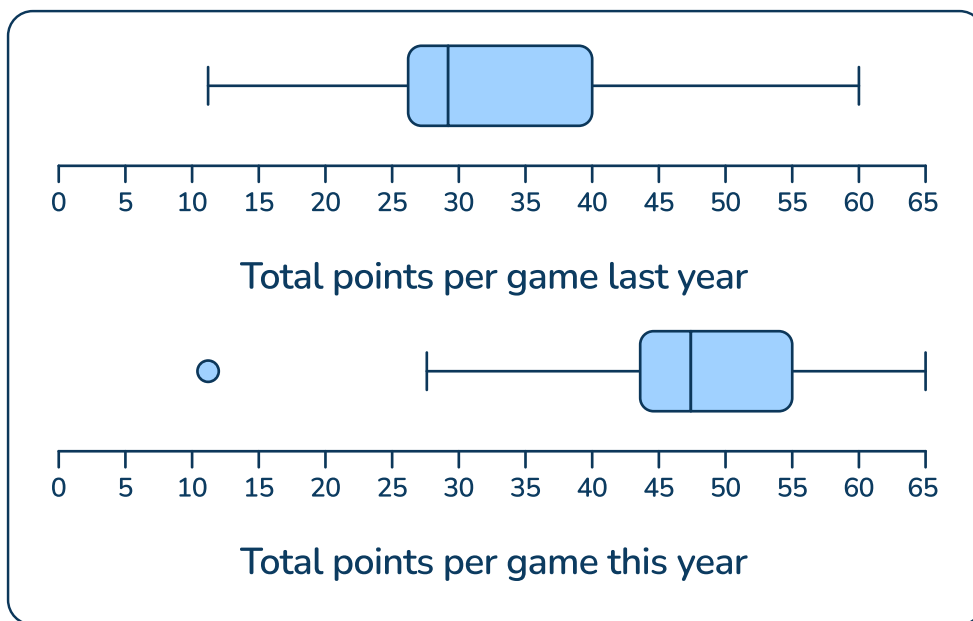


How many feet of fencing is needed?

Write your answer in the box.

 Answer

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



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


- A. There is an outlier 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. The middle 50% of last year's games is below the middle 50% of this year's games.
- D. The range for this year is larger than the range for last year.

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

- 15 red marbles
- 10 blue marbles
- 30 green marbles

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

Write your answer in the box.

 Answer

-
- 14 Which values represent a likely probability of an event occurring? Select all the correct answers.

A. $\frac{5}{6}$

B. 0.7

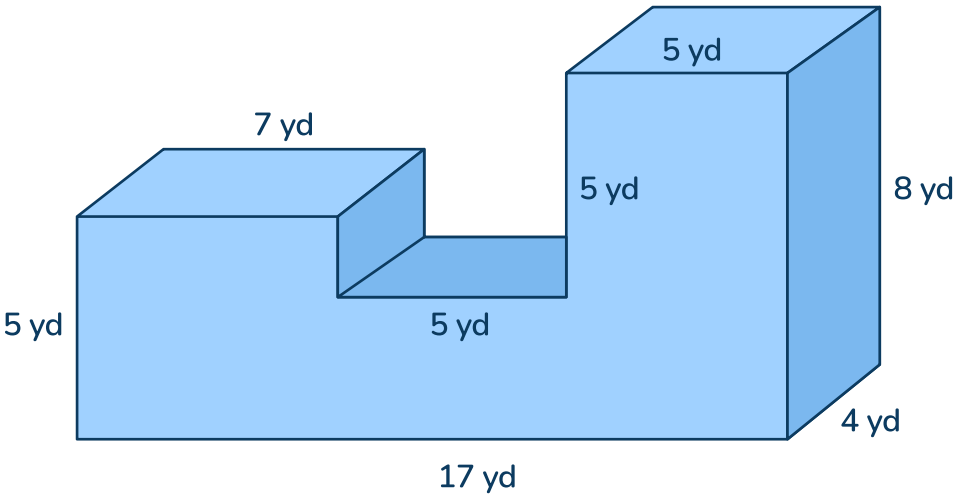
C. 100%

D. 0.459

E. $\frac{3}{7}$

F. 50%

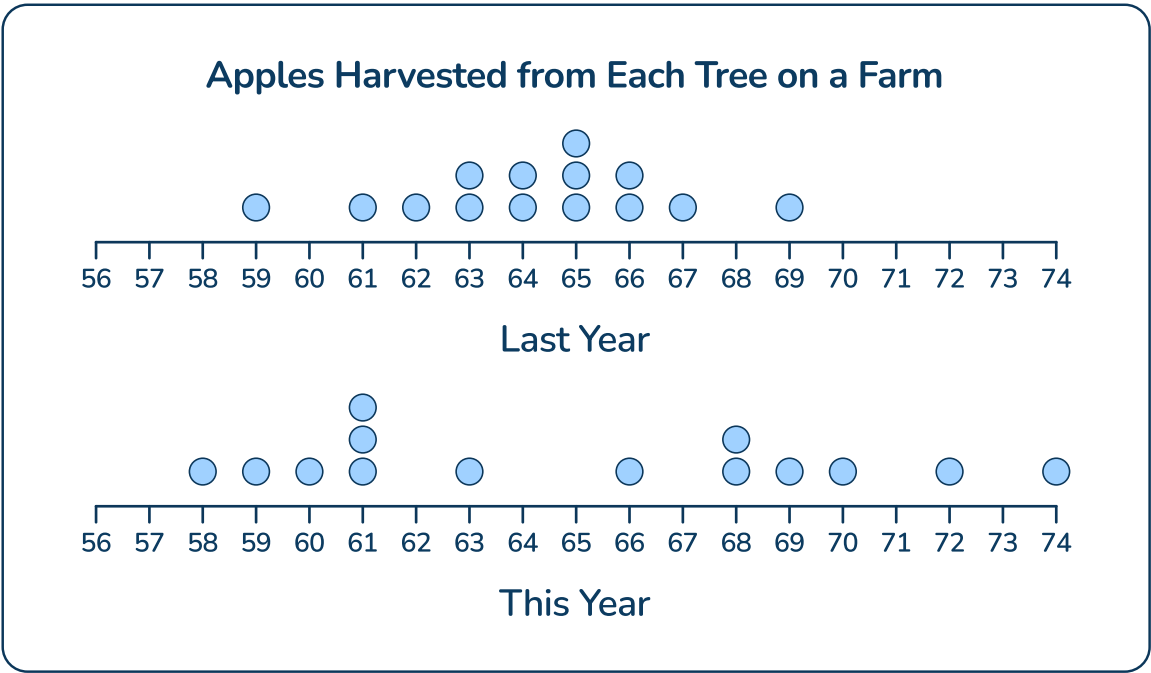
15 What is the volume of the figure, in cubic yards?



Write your answer in the box.

 Answer

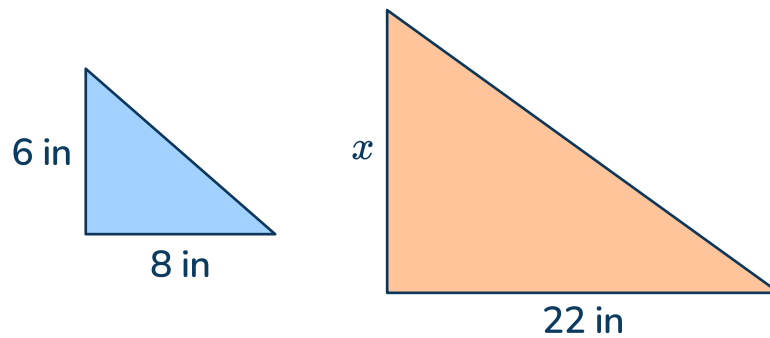
- 16 A farmer counted the number of apples harvested from each tree last year and this year. The data is shown on the two dot plots below.



Based on the dot plots, select three statements that are true.


- A. The mean for last year is smaller than the mean for this year.
- B. The interquartile range to last year is greater than this year.
- C. The median apples harvested are the same for both years.
- D. The mean absolute deviation for last year is less than this year.
- E. The range for this year is less than the range for last year.

- 17 The orange triangle is a scaled version of the blue triangle.



What is the value of x , the missing height?

Write your answer in the box.

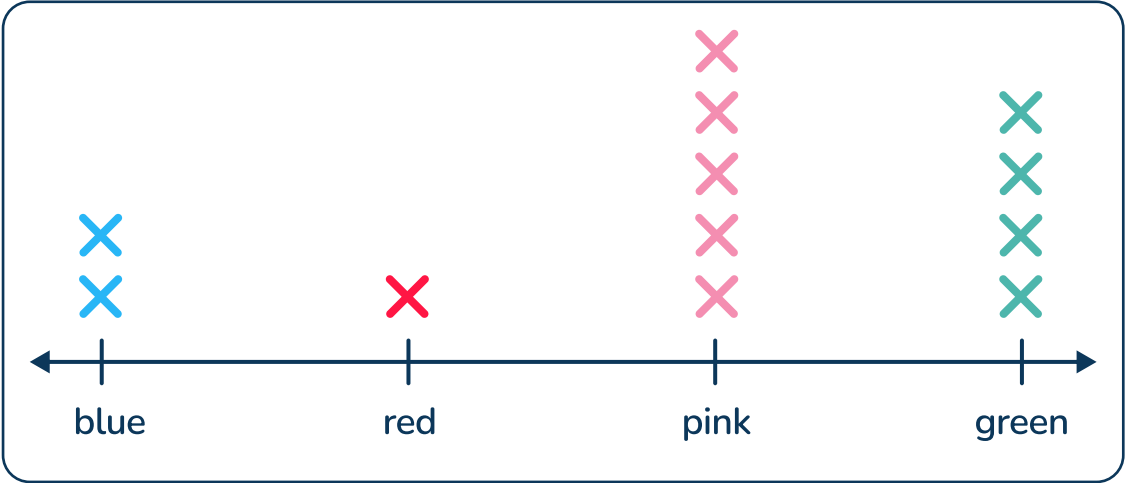
 Answer

- 18 Hope Animal Shelter rescues cats and dogs in the city of Highton. Janice randomly chose 25 cats at Hope Animal Shelter. She tracks how many days it takes for them to get adopted.

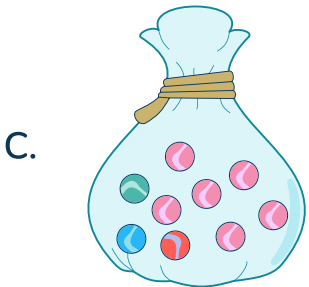
Which population is represented by her sample data?

- A. Only the 25 cats in the random sample
- B. All the cats at Hope Animal Shelter
- C. All the cats and dogs at Hope Animal Shelter
- D. All the cats in the city of Highton

- 19 Mei has a bag of marbles. She randomly chooses one and records the color on the frequency chart. Then she places the marble back into the bag and repeats the process twelve times.



Which choice is most likely the actual bag of marbles?



- 20 Santiago bought 3 games at the same price. Santiago went to the store with \$52 and left with \$13.75. Choose the equations that represent the cost of each game, g . Select **all** the correct answers.

A. $52 - 3g = 13.75$

B. $3g - 52 = 13.75$


C. $3g + 13.75 = 52$

D. $52 - 13.75g = 3$

E. $3g - 13.75 = 52$

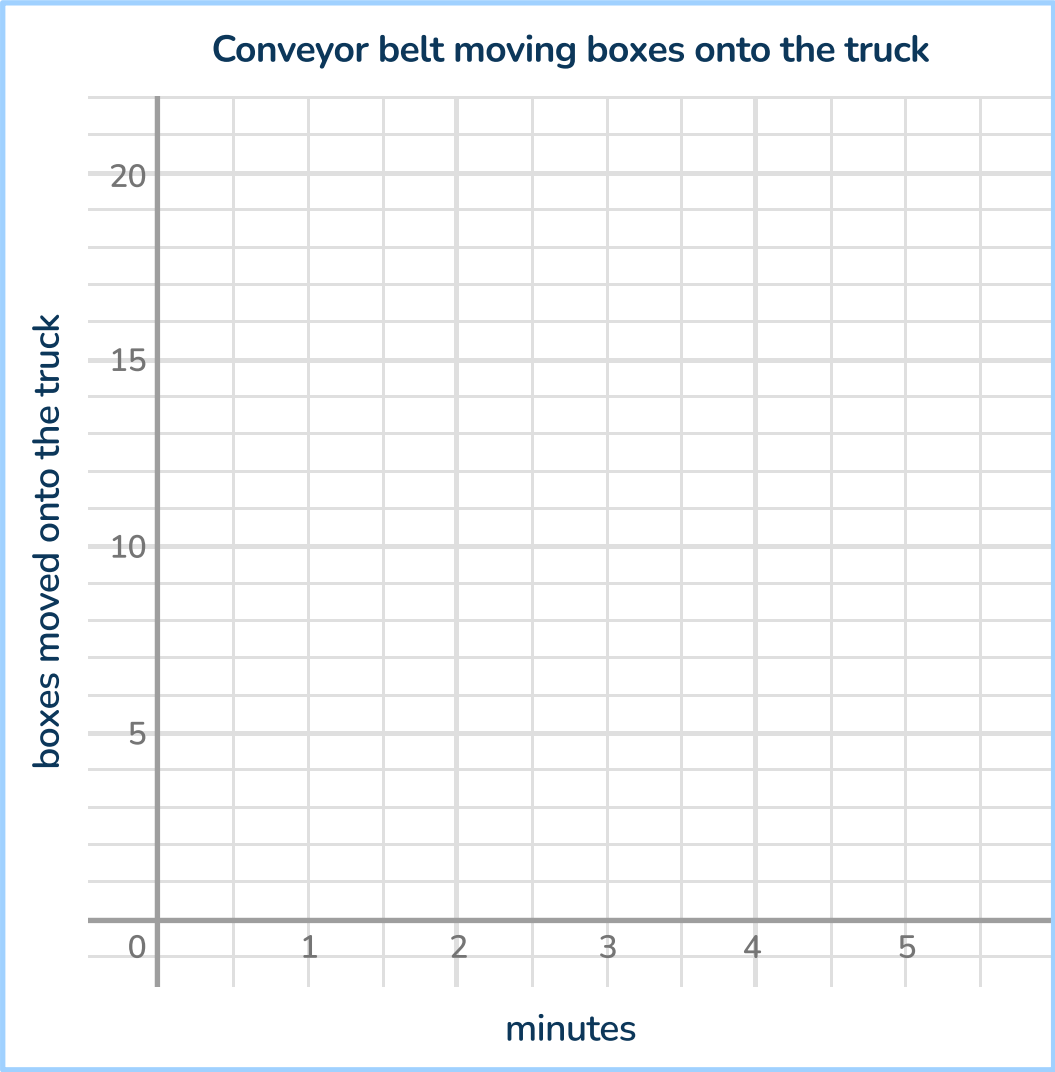
What is the cost of 1 game, g ?

Write your answer in the box.

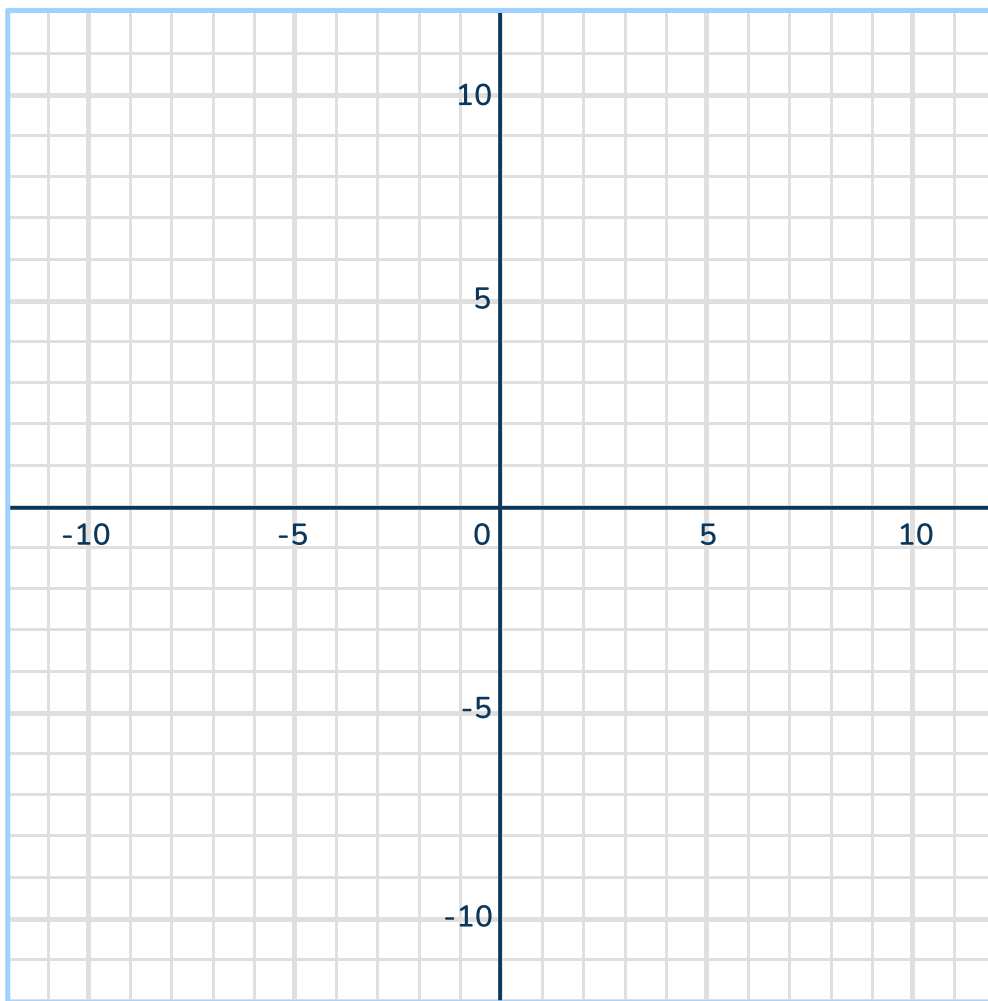
 Answer

- 21
- A conveyor belt moves boxes off a truck at a rate of 5 boxes per minute. Another conveyor belt moves boxes onto the truck at half the rate of the first conveyor belt.

Complete the graph to show the relationship between the minutes and the boxes moved off the truck as a line.




- 22 The slope of a line is $-\frac{1}{2}$. The line passes through point (1,4). Show the line on the graph below.



23 $a(x + 9) \equiv \frac{x}{3} + 3$

Which value for a makes the identity true?

Write your answer in the box.

 Answer

- 24 Ravi is five years older than his brother Dhru. Dhru is twice the age of their sister Aditi. Which equation(s) show the relationship between Ravi's age, r , and Aditi's age, a . Select all the correct answers.

A. $\frac{r - 5}{2} = a$

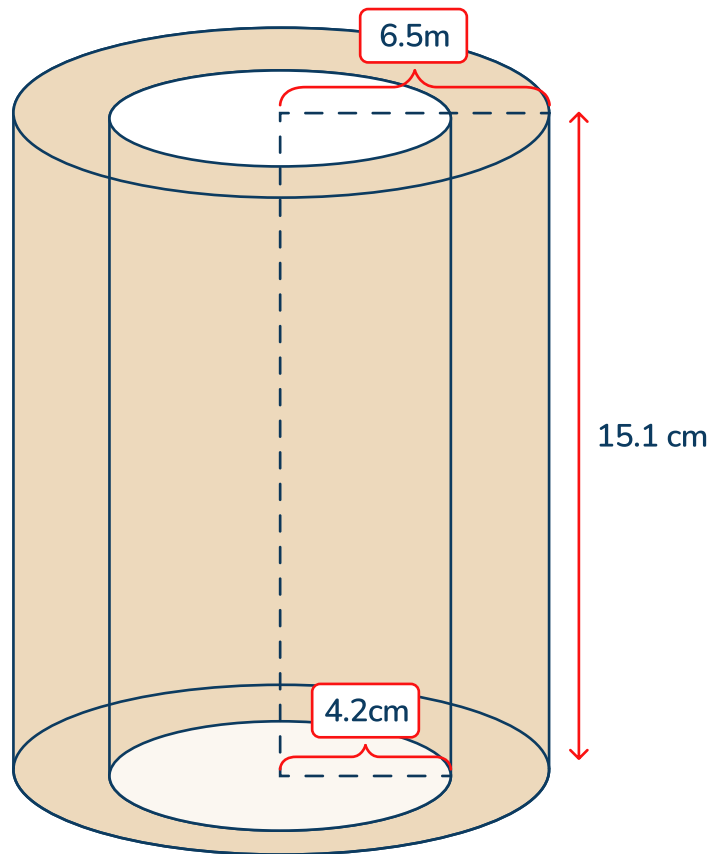
B. $10 + 2r = a$

C. $2a + 5 = r$

D. $2(r + 5) = a$


E. $2(a + 5) = r$

- 25 Luca cuts a smaller cylinder out of a larger wooden cylinder.



What is the volume, in cubic centimeters, of the wood left?
Record your answer in terms of π .

Write your answer in the box.

 Answer


- 26 Lian runs $7\frac{1}{2}$ miles in $1\frac{1}{3}$ hours. What is Lian's average speed, in miles per hour?

Write your answer in the box.

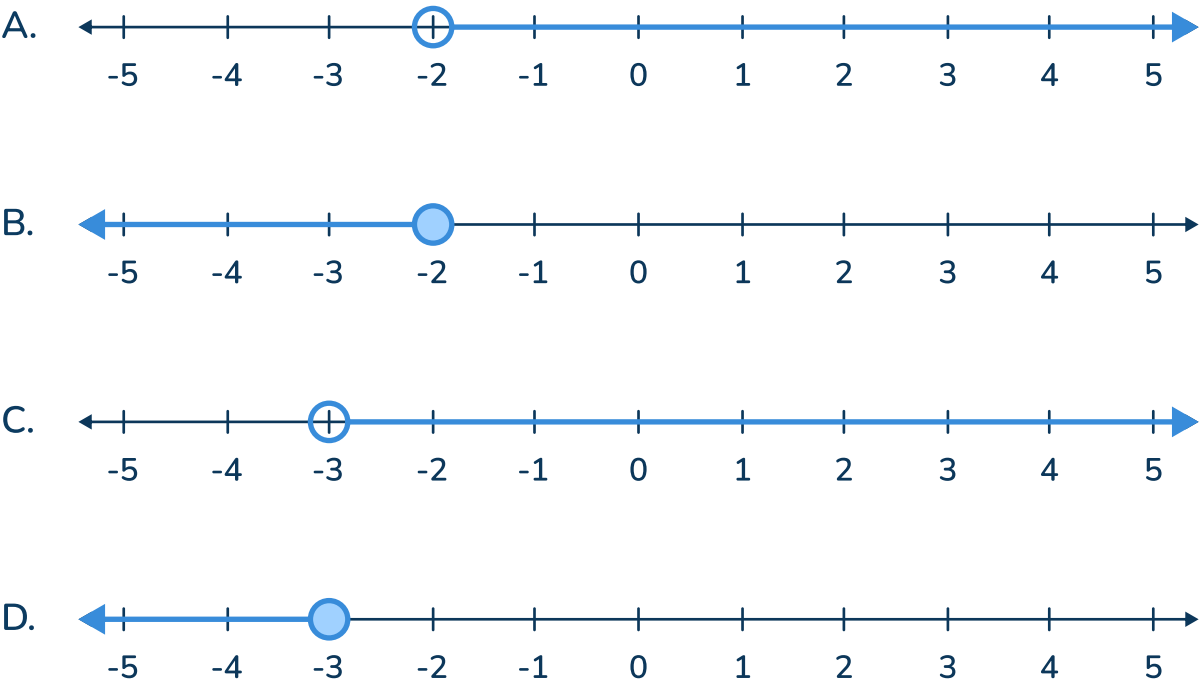
 Answer

-
- 27 Daisy earns \$18.25 per hour and works 40 hours per week. Daisy is paid every 2 weeks, and she puts 20% of her check into savings. How much money does Daisy save after 8 weeks?

Write your answer in the box.

 Answer

28 Which graph shows the solution to $8x - 4 > -20$?



29 The equation $7.25x = y$ models the cost, in dollars, for a child's movie tickets. The table models the cost, y , for an adult's ticket.

x	3	5	6
y	\$33.45	\$55.75	\$66.90

What is the difference in the cost of 1 child's movie ticket and 1 adult's movie ticket?

Write your answer in the box.

Answer

30 Imagine the graphs of the situations below. Which represent varying rates of change? Select **all** the correct answers.


- A. A car's speed traveling from home to school.
- B. A streaming service that charges its users the same price each month.
- C. An employee who earns \$15 per hour worked.
- D. The weight of a cat from birth to 7 years old.
- E. The total miles Rashad runs, if he doubles the miles he runs each day for a week.

31 A teacher wants to know the favorite sport of all the students at his school. Which sampling process will be most representative of the population?

- A. The teacher surveys the students in the soccer club.
- B. The teacher surveys every third student who walks into the school that morning.
- C. The teacher surveys the students in his 3rd and 4th period classes.
- D. The teacher surveys every other student in the car rider line that afternoon.

- 32 Zahra bought two pairs of shoes for \$26.99 each. She also bought a pack of socks for \$7. What was the total cost, including a 7% sales tax? Round your answer to the nearest cent.

Write your answer in the box.

 Answer

-
- 33 Which expressions are equivalent to $7(x + 0.5) - 5.6x - 4$? Select all the correct answers.

A. $-2.1x - 4$

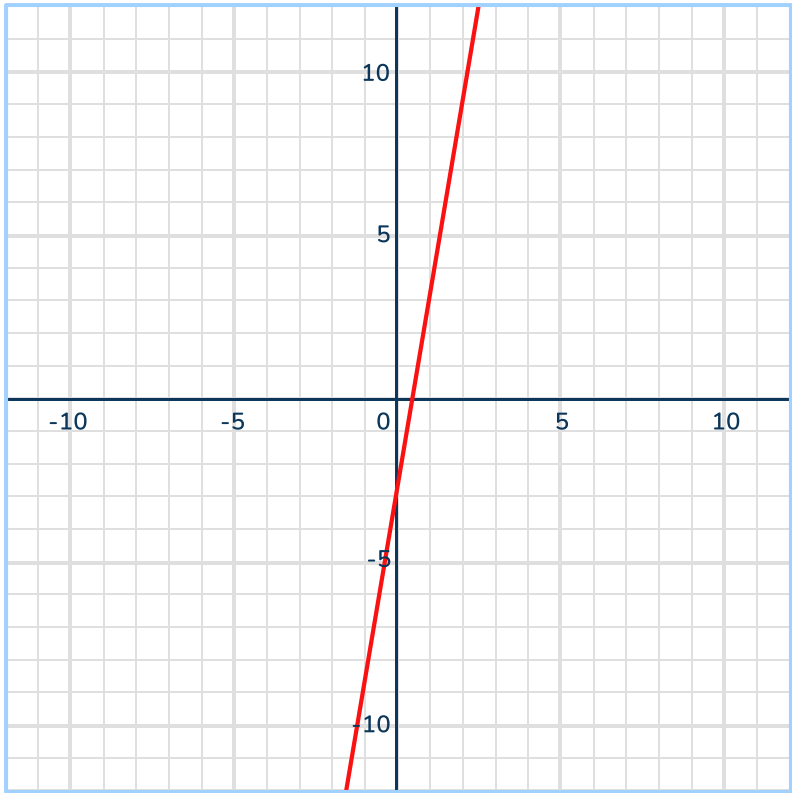
B. $1.4x - 0.5$

C. $5(x + 0.7) - 3.6x + (-3)$

D. $\frac{5.6x - 2}{4}$

E. $-\frac{1}{5}(-7x + 2.5)$

34



What is the slope of the line shown on the graph?

35 Zainab asked all the students in his class whether they play basketball or soccer.

Below are her results:


- 5 of the students just play basketball
- 6 of the students play basketball and soccer
- 19 of the students do not play either sport
- There are 32 students in all

Decide whether each statement is correct, based on Zainab’s survey.

	True	False
If a student in the class is chosen at random, it is likely they play soccer.	<input type="checkbox"/>	<input type="checkbox"/>
If a student in the class is chosen at random, it is unlikely they play basketball.	<input type="checkbox"/>	<input type="checkbox"/>
If a student in the class is chosen at random, it is certain they do not play either sport.	<input type="checkbox"/>	<input type="checkbox"/>


- 36 To make the color aquamarine, Priya mixes 35 ounces of blue paint and 77 ounces of green paint. How many ounces of green paint does Priya use for every 1 ounce of blue paint?

Write your answer in the box.

 Answer

Write an equation that shows the relationship between the ounces of blue paint, x , and the ounces of green paint, y . Use the form $y = mx$.

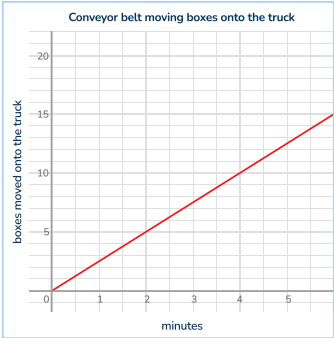
Write your answer in the box.

 Answer

Answer Key - Multiple Choice

Item number	Correct answer	Standard(s)	DOK
1	$y - 10$ $y - (-10)$ $-10 - y$ $10 - y$	7.NS.7(E)	DOK 1
2	-3.15, $-3\frac{3}{20}$ or equivalent	7.NS.2	DOK 1
3	37.5%	7.RP.2	DOK 2
4	-13.275 or $-13\frac{11}{40}$	7.NS.7	DOK 2
5	A, E	7.RP.2	DOK 2
6	C, D	7.NS.6	DOK 2
7	B, C	7.NS.3, 7.NS.4	DOK 1
8	B	7.NS.1	DOK 2
9	3.7	7.NS.7(E)	DOK 1
10	$2^3 \times 3^2 \times 5$	7.NS.5	DOK 1
11	33	7.GM.2	DOK 2
12	C	7.DSP.3	DOK 2
13	$\frac{5}{11}$ or equivalent	7.DSP.5	DOK 2
14	A, B	7.DSP.4	DOK 1
15	360	7.GM.3	DOK 2
16	A, C, D	7.DSP.2	DOK 2

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Item number	Correct answer	Standard(s)	DOK
17	16.5	7.GM.1	DOK 2
18	B	7.DSP.1	DOK 2
19	A	7.DSP.5	DOK 2
20	A, C and \$12.75	7.AF.3	DOK 2
21		7.RP.3	DOK 2
22	$-\frac{1}{2}x + 4\frac{1}{2} = y$	7.AF.6	DOK 1
23	$\frac{1}{3}$	7.AF.1	DOK 2
24	A, C	7.AF.3	DOK 2
25	371.611π	7.GM.3	DOK 2
26	$5\frac{5}{8}$	7.RP.1	DOK 2
27	\$1,168	7.RP.2	DOK 2
28	A	7.AF.4	DOK 2
29	\$3.90	7.RP.1	DOK 2
30	A, D, E	7.AF.5	DOK 2
31	B	7.DSP.1	DOK 1
32	\$65.25	7.RP.2	DOK 2

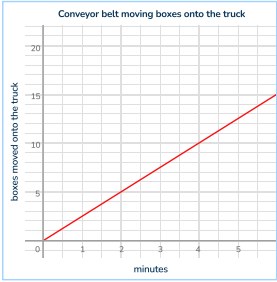
Indiana State Practice Math Test | Grade 7 | Answers

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33	B, D, E	7.AF.1	DOK 1												
34	6	7.AF.6	DOK 1												
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36	2.2 and $2.2x = y$	7.RP.3	DOK 2												

ANSWERS SORTED BY REPORTING CATEGORY

Number Sense			
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6	C, D	7.NS.6	DOK 2
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9	3.7	7.NS.7(E)	DOK 1
10	$2^3 \times 3^2 \times 5$	7.NS.5	DOK 1

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Algebra & Functions, Ratios & Proportional Reasoning			
Item number	Correct answer	Standard(s)	DOK
3	37.5%	37.5%	DOK 2
5	A, E	7.RP.2(E)	DOK 2
20	A, C and \$12.75	7.AF.3(E)	DOK 2
21		7.RP.3(E)	DOK 2
22	$-\frac{1}{2}x + 4\frac{1}{2} = y$	7.AF.6(E)	DOK 1
23	$\frac{1}{3}$	7.AF.1(E)	DOK 2
24	A, C	7.AF.3	DOK 2
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32	\$65.25	7.RP.2(E)	DOK 2
33	B, D, E	7.AF.1(E)	DOK 1
34	6	7.AF.6(E)	DOK 1
36	2.2 and $2.2x = y$	7.RP.3(E)	DOK 2




Geometry and Measurement, Data Analysis, and Statistics (11-13) *ONE MORE																
Item number	Correct answer	Standard(s)	DOK													
12	C	7.DSP.3	DOK 2													
13	$\frac{5}{11}$ or equivalent	7.DSP.5(E)	DOK 2													
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	True	False														
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