

RISING GRADE EIGHT SUMMER REVIEW PACKET

DUE ON THE FIRST DAY OF SCHOOL

The problems in this packet are designed to help you review topics from previous mathematics courses that are essential to your success in your next math class. **You are expected to bring this completed packet to class on the first day of school.** In addition, this packet will count as part of your first quarter grade. **Upon returning, you will be ASSESSED on the content of this packet.** All contents outlined in the packet are Integrated Pre-Algebra objectives. Neatly **SHOW YOUR WORK** on a separate sheet of paper.

- 1 Using the table below, what percent of females were veggie lovers?

	Pepperoni	Cheese	Veggie	
Male	14		1	
Female	13	34		
		47	16	90

- 2 Chris scored 90% in a Math quiz that had 40 problems. How many questions did Chris answer correctly? Write the correct answer.

- 3 6 is what percent of 8?

- 4 Solve the proportion.

$$\frac{1.6}{3.2} = \frac{2.8}{t}$$

$$t = \underline{\hspace{2cm}}$$

- 5 The number of people signed up for a bus trip increased from 32 to 45. What is the percent increase? Round to the nearest percent.

6

Write the fraction $\frac{25}{8}$ as a percentage. Include the percent sign. **(Round to the nearest tenth if needed.)**

7

The cost of a one-year subscription to Whale World magazine used to be \$24. The cost is now \$30 for one year. What is the percent increase in the cost of the subscription?
Enter your answer in the box.

8

What is 70% of 20?

9

Write the fraction $\frac{6}{15}$ as a decimal.

10

John has \$7500 in a savings account that earns 10% interest per year. The interest is not compounded. How much interest(in \$) will he have in one year?

11

Kat borrowed a sum of \$2800 from Nick for three years. If the rate of interest is 6.25% compounded annually, determine the amount(in \$) that Kat has to pay back. Round the answer up to one decimal place.

12

Find the annual interest rate.

$$I = \$24, P = \$400, t = 2 \text{ years}$$

_____ %

13

Joe has \$2500 in a savings account that earns 9% interest per year. How much amount (in \$) will he have in 3 years?

14

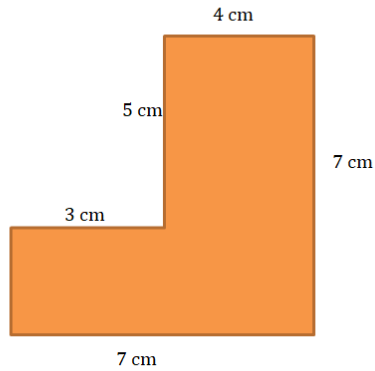
Sam has \$1000 in a savings account that earns 8% interest per year. The interest is not compounded. How much amount(in \$) will he have in one year?

15

Jack borrowed a sum of \$1500 from Sam for two years. If the rate of interest is 10% compounded annually, determine the amount(in \$) that Jack has to pay back.

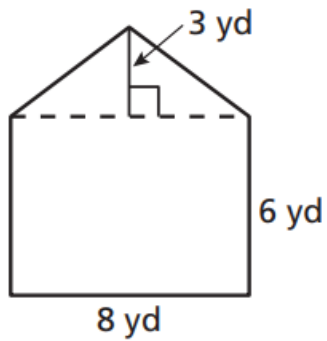
16

Calculate the area of the composite figure given below. Enter the value of the area obtained in cm^2 .



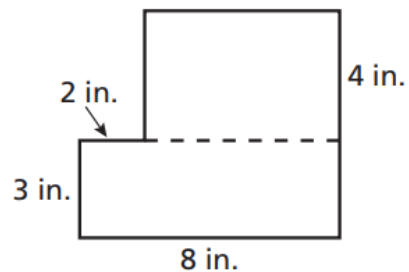
17

Find the area of the composite figure.



18

Find the area of the composite figure.



19

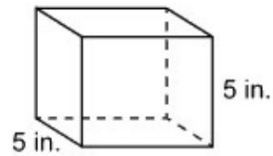
The area of a circle is 12.56 square inches. Determine the radius of the circle (in inches) and write the correct answer. Use $\pi = 3.14$.

20

The radius of a circle is 9 meters. Determine the area of the circle (in square meters) and write the correct answer.
Use $\pi = 3.14$.

21

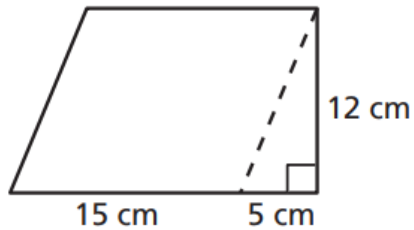
A rectangular prism is shown.



The volume of the prism is 150 cubic inches. What is the surface area, in square inches, of the prism?

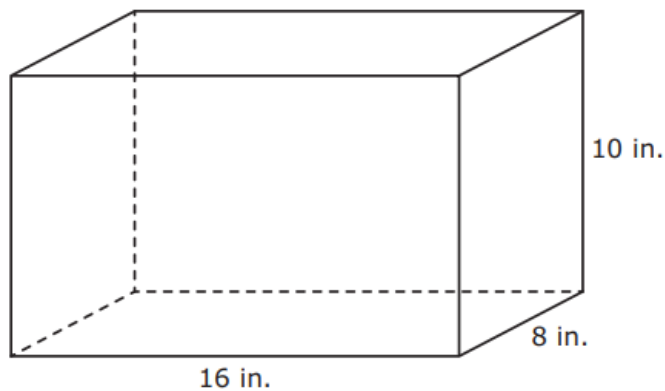
22

Find the area of the composite figure.



23

The dimensions of a rectangular prism are shown in the diagram.



What is the total surface area in square inches of the prism?

24

The volume of a cube is 27 cubic meters. What is its surface area, in square meters?

25

If the radius of a circle is 4.9 meters, then calculate the area of the circle (in square meters) up to two decimal places. Use $\pi = 3.14$. Write the correct answer.

26

The value of an angle is 48° . Determine its supplementary angle in degrees and write the correct answer.

27

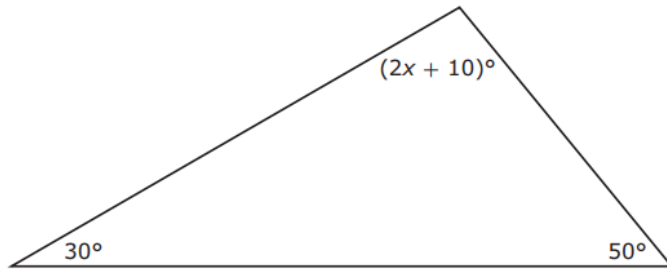
The values of two angles of a triangle are 90° and 45° , respectively. Calculate the value of the third angle of the triangle in degrees.

28

Angle X and angle Y are complementary. The measure of angle Y is 75° . What is the measure, in degrees, of angle X?

29

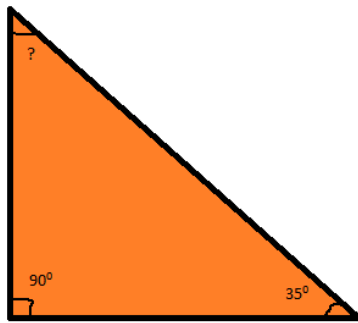
The angle measures of a triangle are shown in the diagram.



What is the value of x ?

30

Determine the missing angle (in degrees) in the given triangle and write the correct answer.



31

Solve the given equation for z and write the correct answer.

$$4z + 9 = 29$$

32

Solve the following equation for a and write the correct answer.

$$7a + 4 = 25$$

33

Solve the following equation for t and write the solution.

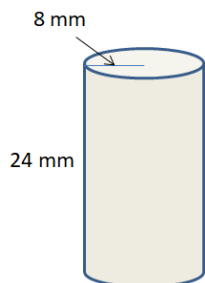
$$16t - 4t = 72$$

34

The base of a rectangular prism is 18 square feet and the height is 9 feet. A rectangular pyramid with a congruent base and height is placed on the top of the rectangular prism. What is the total volume of the new structure (in cubic feet)? Write the correct answer.

35

Find the volume of the cylinder.

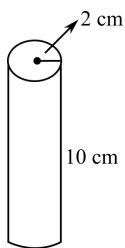


Use $\pi = 3.14$ and round to nearest hundredth

V=

36

What is the volume of the given cylinder in cubic cm? Use $\pi = 3.14$ and write the correct answer.



37

What will be the area of a cylinder having a height of 5 cm and a radius of 2 cm? Use $\pi = 3.14$. Round the obtained area up to one decimal place and write the correct answer.

38

An above-ground swimming pool in the shape of a cylinder has a diameter of 16 feet and a height of 5 feet. If the pool is filled with water to 1.5 feet from the top of the pool, what is the volume, to the nearest cubic foot, of the water in the pool?

39

Determine the volume of a cone having a radius of 3 inches and a height of 12 inches. Use $\pi = 3.14$ and write the correct answer.

A right circular cone has a height of 11 centimeters and a diameter of 7 centimeters. What is the approximate volume, in centimeters, of the cone?

(a)

- (A) 44.9π
 - (B) 70.6π
 - (C) 179.7π
 - (D) 282.3π
-

(b) A right cylinder has a volume of $1,296\pi$ cubic centimeters and a height of 9 meters. What is the diameter, in meters, of the cylinder?

Enter your answer in the box.

(c) A sphere has a radius of 4 millimeters. What is the volume, in cubic millimeters, of the sphere?

Enter your answer in the box.

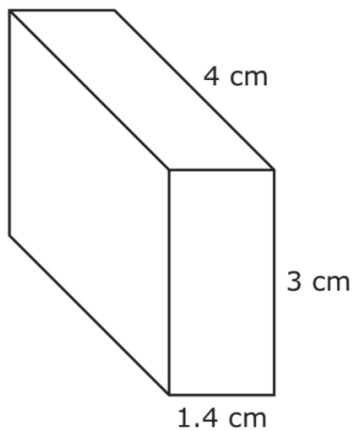
(d) Information about the radius and the height of a right cylinder and a right circular cone are given.

- The radius of the cylinder is 6 times the radius, in centimeters, of the cone.
- The cylinder and the cone have the same height.

How many times greater is the volume of the cylinder than the volume of the cone?

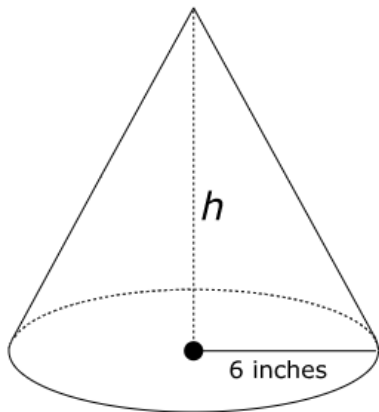
- (A) 6
 - (B) 18
 - (C) 36
 - (D) 108
-

The dimensions of the rectangular prism shown are given in centimeters.



What is the volume of the rectangular prism in cubic centimeters?

The cone shown in the diagram has a circular base with a radius of 6 inches perpendicular to the height. The volume of the cone is 414.7 cubic inches.



Part A

What is the height, h , of the cone to the nearest whole inch?

Enter your answer in the box.

(a)

Part B

If the length of the radius is doubled and the height of the cone changed to 8 inches, find the volume of the new cone. Round your answer to the nearest whole cubic inch.

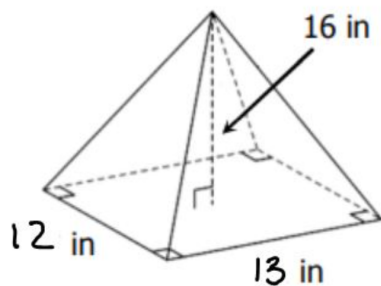
Enter your answer in the box.

43

Find the volume of the rectangular pyramid. State the area of the base and the volume.

$$A = l \cdot w$$

$$V = \frac{1}{3}Bh$$

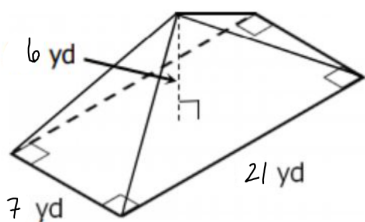


44

Find the volume of the rectangular pyramid. State the area of the base and the volume.

$$A = l \cdot w$$

$$V = \frac{1}{3}Bh$$



45

This list shows the number of countries outside the United States that 12 students in Mr. Miller's class have visited.

(a)

3, 1, 9, 5, 2, 0, 0, 2, 6, 1, 6, 1

Based on the list, what is the median number of countries outside the United States that Mr. Miller's students have visited?

- (A) 1
- (B) 2
- (C) 3
- (D) 9

(b) Based on the list, what is the mean number of countries outside the United States that Mr. Miller's students have visited?

46

Ava has the following data:

8, 9, 9, d , 9, 11

If the mean of the data is 9, then what is the value of d ? Write the correct answer.

47

Determine the mean of the following data and write the correct answer.

11, 0, 6, 1, 0, 0

48

John buys different books from a store. Their prices are given below.

\$2, \$7, \$7, \$3, \$6

Determine the mean of the prices, in dollars, and write the correct answer.

49

Determine the mode of the given data and write the correct answer.

2, 7, 9, 9, 4, 5, 9

50

Determine the mean of the following data and write the correct answer.

1.5, 2, 2.5, 5, 3, 1, 5, 8, 1, 1

51

Lucas has the following data:

21, 34, 28, 60, 20

Determine the range of the given data and write the correct answer.

52

The mode of the following data is 13.

20, b , 2, 13

What is the value of b ? Write the correct answer.

53

Joseph has the following data:

8, 4, 7, 4, 7, 1, 0, 8, 0, 8

Determine the mode of the given data and write the correct answer.

54

Use the Distributive Property and Combining Like Terms to simplify.

$$-6(x + 2) - 2$$

55

Jack uses a frequency chart as given below to keep a record of the family pets.

Types of Pets	Frequency
Dog	16
Cat	11
Fish	4
Lizard	5

How many cats are there in Jack's family? Write the correct answer.

56

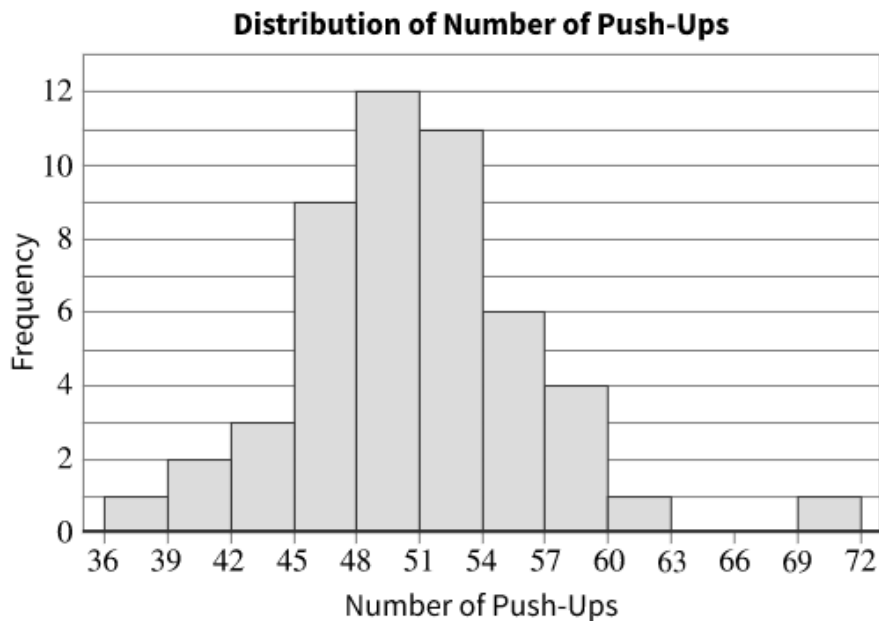
A teacher uses a frequency chart as given below to keep a record of grades of the students. The students securing grade D are considered failures.

Grade	Frequency
A	20
B	55
C	21
D	4

How many students did fail? Write the correct answer.

57

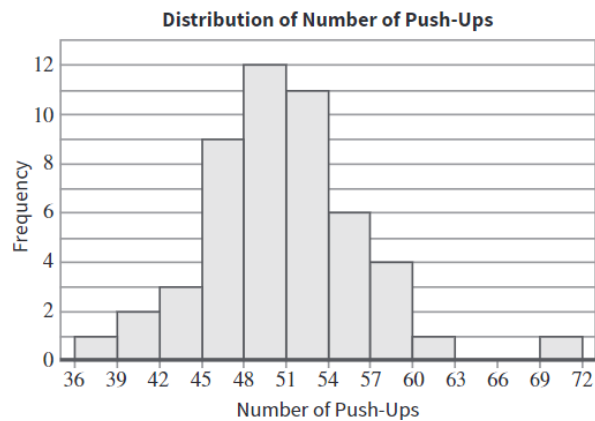
The following histogram summarizes the recorded number of push-ups that a group of fitness instructors completed in a certain time period. Each interval contains possible values at the left endpoint up to but not including the right endpoint.



What is the total number of fitness instructors represented in the histogram who completed 57 or more push-ups?

58

The following histogram summarizes the recorded number of push-ups that a group of fitness instructors completed in a certain time period. Each interval contains possible values at the left endpoint up to but not including the right endpoint.



What is the total number of fitness instructors represented in the histogram who completed 57 or more push-ups?
Enter your answer in the space provided.

59

Find the **range** of the given stem and leaf:

Stem	Leaf
6	5 9
7	3 8
8	0 2 6 8
9	1 5

Range =

60

Find the **mode** of the given stem and leaf plot:**Red gumdrops per bag**

Stem	Leaf
2	2 8
3	0 2 4 4 4 9
4	4 6
5	5
6	1
7	1 6

Mode =

61

Find the **median** of the given stem and leaf plot:**Floors per building**

Stem	Leaf
1	8
2	0 1
3	
4	
5	0
6	5
7	2 5

Median =

a

- ☐ 50
☐ 60
☐ 70

62

Find the **mode** of the given stem and leaf plot:**Lemon-flavored candies per bag**

Stem	Leaf
6	2 3 4
7	0 3 6 6
8	2 5 8
9	0

Mode =

63

The stem and leaf plot shows the scores of eight people at a dance contest.

Dance Contest Scores

Stem	Leaf
6	8 9 9
7	5
8	2 7
9	5 7

6|8 means 6.8.

What is the difference between the highest score and the lowest score?

(A) 2.8

(B) 2.7

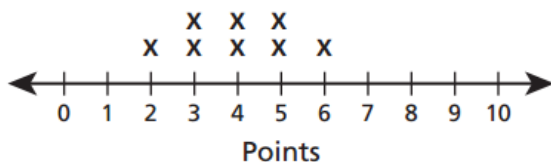
(C) 2.9

(D) 2.6

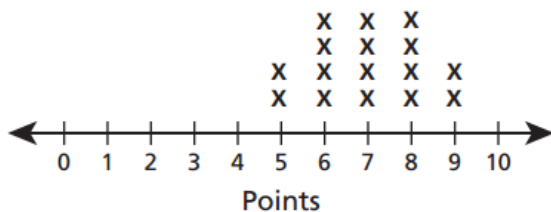
Ms. Andrews made the line plots below to compare the quiz scores for her first-period math class and her second-period math class. She gave the same quiz to each class.

QUIZ SCORES

First-Period Class



Second-Period Class



What conclusion can Ms. Andrews make about the performance of her first- and second-period classes?

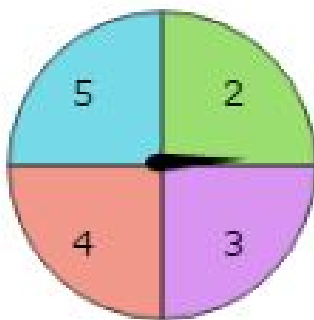
- (A) The first-period class had a higher median score than the second-period class.
- (B) The second-period class scores had a higher mean than the first-period class scores.
- (C) The first-period class scores had a greater range than the second-period class scores.
- (D) The second-period class scores had a greater mean absolute deviation than the first-period class scores.

Simplify the expression and combine like terms.

$$4(x - 2) + 2(x + 1) = \boxed{}$$

You spin the spinner below once.

What is the $P(\text{getting a number less than 5})$?



- (A) 1
- (B) $\frac{3}{4}$
- (C) $\frac{1}{2}$
- (D) 2

Four oranges at Juicy Deals grocery store cost \$6. For the price of \$15 you can buy 10 oranges. True or false: The relationship between the number of oranges and their price is proportional.

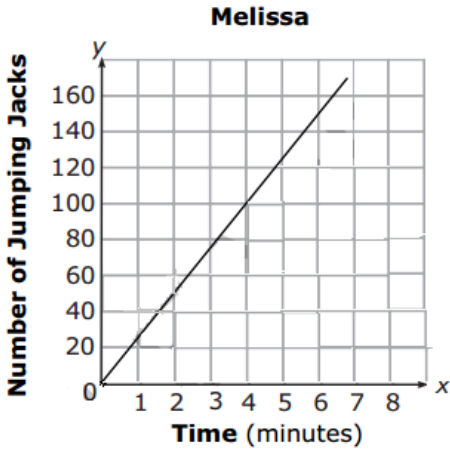
- (A) true
- (B) false

68

Alicia and Melissa did jumping jacks. The table below shows the number of jumping jacks that Alicia had done in different amounts of time.

Alicia	Time (minutes)	1	2	3	4	5	6	7	8
	Jumping Jacks	30	60	90	120	150	180	210	240

The graph below shows the number of jumping jacks Melissa had done in different amounts of time.



Which choice **best** describes the difference between the rates at which the girls did jumping jacks?

- (A) Melissa did 6 more jumping jacks per minute than Alicia.
- (B) Alicia did 6 more jumping jacks per minute than Melissa.
- (C) Melissa did 5 more jumping jacks per minute than Alicia.
- (D) Alicia did 5 more jumping jacks per minute than Melissa.

69

$$\frac{3}{4}(x + 8) = 9$$

In the equation shown, what is the value of x that makes the equation true?

Enter your answer in the box.

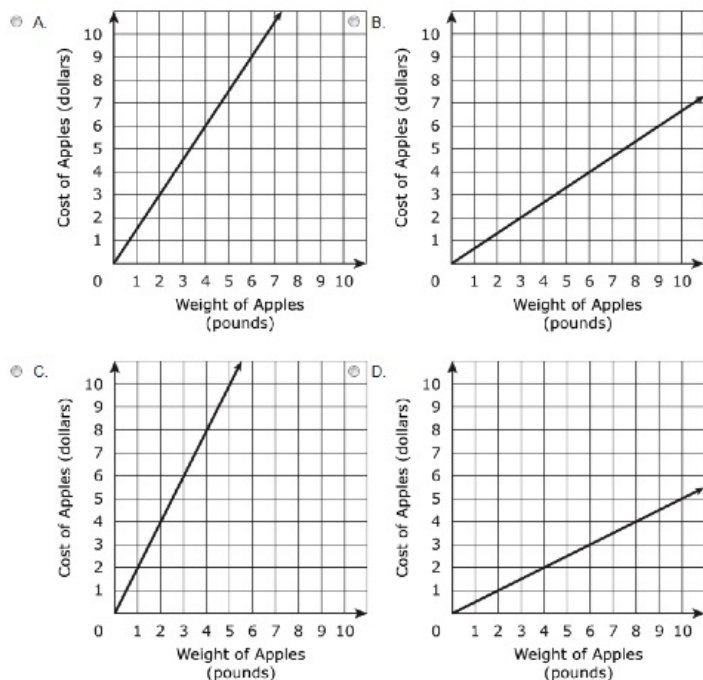
70

Find the unit rate.

45 books in 5 shelves = books per shelf.

71

At a local market, the cost of apples is directly proportional to the weight of the apples. Carlos bought 10 pounds of apples for a cost of \$15.00. Which graph shows the relationship between the weight of the apples, in pounds, and the cost of the apples, in dollars?



Ⓐ A

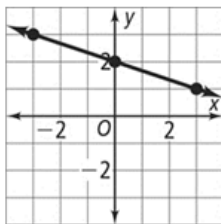
Ⓑ B

Ⓒ C

Ⓓ D

72

Directions - Find the slope ($\frac{\text{rise}}{\text{run}}$).



Slope:

73

Write down the equation in slope intercept form if slope $m=2$ and y intercept is $(0,3)$.

74

Determine the slope of the line passing through $(4, -2)$ and $(7, 10)$.

75

PROFICIENT (5 points)

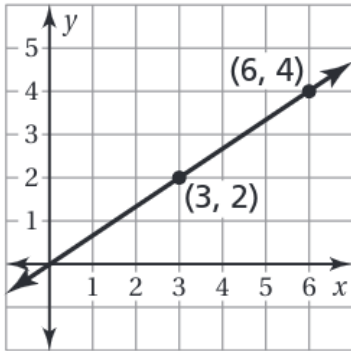
Write the equation of the line in slope-intercept form with the following slope and y-intercept:

slope: $\frac{5}{6}$

y-intercept: $(0, -1)$

76

Find the slope of the line.



77

Find the value of x that makes the equation below true.

$$8 - 2(3x + 8) = 10$$

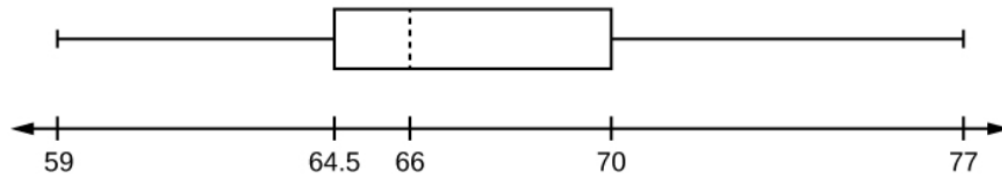
78

Find the value of x that makes the equation below true.

$$\frac{1}{3}(x - 12) = 2x + 1$$

79

The given box plot has been created using the heights of 40 students in a statistics class.



What is the range of the data, as per the given box plot?

80

Alex wants to transfer 30 apples from a large box to a small box. He has three small boxes and one small box can hold 8 apples. Determine the number of apples that remain in the large box.

81

Simplify the expression below. Type your answer in the box:

$$-5v + 2 - (1 - 7v) + 11v$$

82

Simplify without a negative exponent.

$$(3z^4)^2$$

83

Simplify without negative exponents.

$$x^2 \cdot x^7$$

84

Simplify without negative exponents.

$$(x^2)^7$$

85

Find the difference. Write your answer in scientific notation.

$$(9.7 \times 10^6) - (2.5 \times 10^6)$$

86

Write in scientific notation: 0.00916

87

Find the product. Write your answer in scientific notation.

$$(6.9 \times 10^5) \times (3.1 \times 10^{-9})$$

88

Probabilities for two events, event A and event B , are given.

$$P(A \text{ and } B) = 0.14$$

$$P(B) = 0.4$$

What is the probability of A given B ?

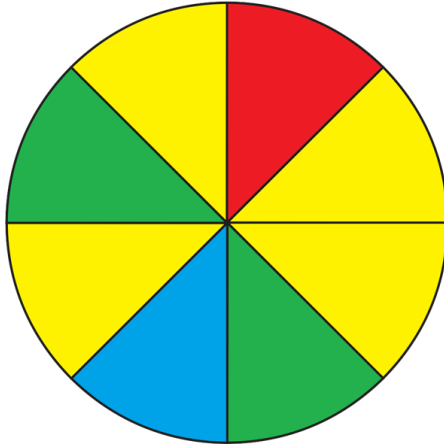
89

A coin is tossed and a die is rolled simultaneously. What is the probability of getting a head and a number less than 3?

Write the answer as a fraction.

You spin the spinner once. Find the probability of each event.

(a)



$P(\text{green}) = \underline{\hspace{2cm}}$

(b) $P(\text{yellow}) = \underline{\hspace{2cm}}$

(c) $P(\text{red}) = \underline{\hspace{2cm}}$

(d) $P(\text{purple}) = \underline{\hspace{2cm}}$

A bag contains 6 red marbles, 4 black marbles, and 5 blue marbles. A marble is picked without looking into the bag. Determine the probability of picking a blue marble.

Write the answer as a fraction in the simplest form.

In a restaurant, 4 out of every 12 customers order orange juice with their meal. What is the experimental probability that the next customer will order orange juice with their meal?

Write the answer as a fraction in the simplest form.

93

Maurice has a bag containing 40 small wooden blocks.

- There are 20 cubes, of which 5 are blue.
- There are 20 spheres, of which 6 are blue.

Maurice randomly selects a cube from the bag.

What is the probability that the cube he selects is blue?

94

What is the solution to this equation?

$$-12x - 7 = 53$$

95

Rewrite the following standard form linear equation into slope-intercept form. Write the answer starting with $y=$

$$12x - 4y = -12$$

96

Write down the equation in slope intercept form if slope $m=4$ and y intercept is $(0,-5)$. Do not leave spaces.

97

Use the Distributive Property to rewrite each expression in its equivalent form.

(a) Part A

$$4x(5x + 2)$$

(b) Part B

$$\frac{35x - 21}{7}$$

(c) **Part C**

$$-2x(6 - 4x)$$

(d) **Part D**

$$\frac{-27x + 45}{-9}$$

98 Simplify without a negative exponent.

$$\frac{24x^8y^6}{4xy^2}$$

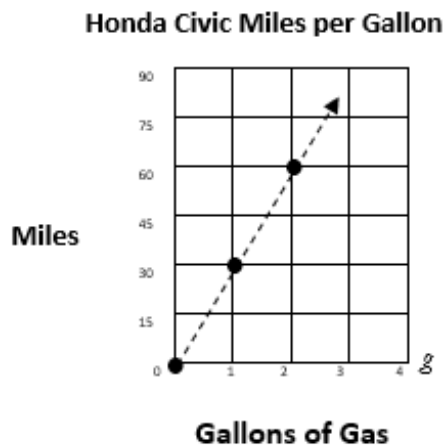
99 The table given below shows the year and number of people living in a particular city for several years.

Year	2000	2001	2002	2003
Number of people	7000	6600	7400	8200

According to the table, what is the rate of change between 2003 and 2002?

100

Below is a graph of the number of miles (m) you can drive in a Honda civic if you have g gallons of gas.



What is the rate of miles per gallon you can drive in a Honda Civic?