

**Student:** \_\_\_\_\_  
**Date:** \_\_\_\_\_

**Instructor:** Alfredo Alvarez  
**Course:** Math 0410 / 0320 Alvarez

**Assignment:**  
MATH7-8THGRADEWARMUP147Q

1. Fill in the blank below.

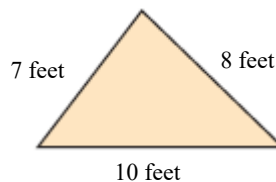
The numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12,... are called \_\_\_\_\_ numbers.

The numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12,... are called (1)  numbers.

- (1)  whole  
 natural

Answer: (1) whole

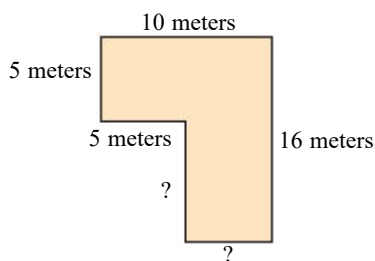
2. Find the perimeter of the figure.



The perimeter is  feet.

Answer: 25

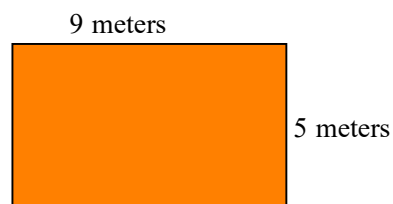
3. Find the perimeter of the figure.



The perimeter is  m.

Answer: 52

4. Find the area and the perimeter of the rectangle shown to the right.



The area of the rectangle is  (1)

The perimeter of the rectangle is  (2)

- (1)  meters.  
 square meters.  
 cubic meters.
- (2)  square meters.  
 cubic meters.  
 meters.

Answers 45

(1) square meters.

28

(2) meters.

5. One triple fudge brownie contains 104 calories. How many calories are in 13 triple fudge brownies?

calories

Answer: 1352

6. Find the average value of the following list of numbers.

20, 22, 47, 26, 11, 18

The average value is .

Answer: 24

7. Simplify.

$$50 + 4 \cdot 4$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A.  $50 + 4 \cdot 4 =$  \_\_\_\_\_  
 B. The expression is undefined.

Answer: A.  $50 + 4 \cdot 4 =$

8. Simplify.

$$5 \cdot 7 + 5 \cdot 9$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A.  $5 \cdot 7 + 5 \cdot 9 =$  \_\_\_\_\_

B. The expression is undefined.

Answer: A.  $5 \cdot 7 + 5 \cdot 9 =$

9. Simplify.

$$3^4 - [34 - (12 - 6)]$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A.  $3^4 - [34 - (12 - 6)] =$  \_\_\_\_\_

B. The expression is undefined.

Answer: A.  $3^4 - [34 - (12 - 6)] =$

10. Evaluate the expression for  $x = 5$  and  $z = 3$ .

$$5xz - 4x$$

$$5xz - 4x = \text{$$

Answer: 55

11. Evaluate the expression for  $x = 5$ ,  $y = 3$ , and  $z = 2$ .

$$\frac{x + 3y}{z}$$

$$\frac{x + 3y}{z} = \text{$$

Answer: 7

12. Evaluate the algebraic expression for the given value.

$$x^2 - 4x + 3, \text{ for } x = 7$$

When  $x = 7$ ,  $x^2 - 4x + 3 =$  .  
(Simplify your answer.)

Answer: 24

13. Fill in the blank below.

The numbers ... - 3, - 2, - 1, 0, 1, 2, 3,... are called \_\_\_\_\_.

---

The numbers ... - 3, - 2, - 1, 0, 1, 2, 3,... are called (1)

- (1)  whole numbers.     natural numbers.  
 positive numbers.  
 integers.  
 negative numbers.

Answer: (1) integers.

---

14. Simplify.

$$3 + 7 \cdot 8 - 14$$

$$3 + 7 \cdot 8 - 14 = \text{}$$

Answer: 45

---

15. Solve. Check your solution.

$$x + 3 = 23$$

The solution is  $x = \text{}$ .

Answer: 20

---

16. Solve. Check your solution.

$$13 = y - 6$$

The solution is  $y = \text{}$ .

Answer: 19

---

17. Solve.

$$6x = 60$$

The solution is  $x = \text{}$ .

Answer: 10

---

18. Solve the equation. First combine any like terms on each side of the equation.

$$x - 6 = -5 + 3$$

The solution is  $x =$  .

Answer: 4

---

19. Solve the following equation.

$$2x - 12 = 0$$

$x =$

Answer: 6

---

20. Solve the equation.

$$5n + 30 = 50$$

$n =$

Answer: 4

---

21. Solve the equation.

$$x + 24 + 2x = 2 - 2x - 3$$

$x =$

Answer: -5

---

22. Solve the equation.

$$25 + 3y - 1 = 15y - 11 - 5y$$

$y =$

Answer: 5

---

23. Solve the equation.

$$-9c + 5 = -13$$

$c =$

Answer: 2

---

24. Find the prime factorization of the following number.

110

The prime factorization of 110 is .

Answer:  $5 \cdot 2 \cdot 11$

25. Divide  $-\frac{18}{19} \div 36$ . Write the quotient in simplest form.

$$-\frac{18}{19} \div 36 = \text{} \text{ (Type an integer or a fraction.)}$$

Answer:  $-\frac{1}{38}$

26. Perform the indicated operation.

$$7 \div \frac{6}{11}$$

$$7 \div \frac{6}{11} = \text{} \text{ (Simplify your answer.)}$$

Answer:  $\frac{77}{6}$

27. Perform the indicated operation.

$$\frac{2}{3} \div \frac{11}{9}$$

$$\frac{2}{3} \div \frac{11}{9} = \text{} \text{ (Type an integer or a simplified fraction.)}$$

Answer:  $\frac{6}{11}$

28. Find  $\frac{1}{4}$  of 16.

$$\frac{1}{4} \text{ of } 16 \text{ is } \text{} \text{ (Simplify your answer. Type a whole number, fraction, or mixed number.)}$$

Answer: 4

29. Find  $\frac{3}{10}$  of 30. Write the answer in simplest form.

$\frac{3}{10}$  of 30 is . (Simplify your answer.)

Answer: 9

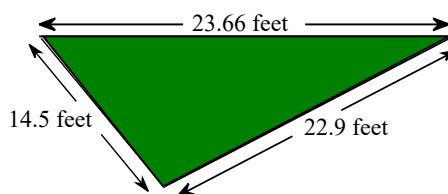
30. Subtract and check the following.

$$14 - 2.1$$

$14 - 2.1 =$   (Type an integer or a decimal.)

Answer: 11.9

31. A landscape architect is planning a border for a flower garden shaped like a triangle. The sides of the garden measure 14.5 feet, 23.66 feet, and 22.9 feet. Find the amount of border material needed.



The amount of border material needed is  feet.  
(Type an integer or a decimal.)

Answer: 61.06

32. Use the values of the coins given below. Write the value of the group of coins shown to the right. To do so, it is usually easiest to start with the coin(s) of greatest value and end with the coin(s) of least value.

Penny	Nickel	Dime	Quarter
			
\$0.01	\$0.05	\$0.10	\$0.25



The total value of the group is \$ .

Answer: 1.05

33. Multiply.

$$(-1.8)(1.27)$$

$(-1.8)(1.27) =$   (Type an integer or a decimal.)

Answer: -2.286

34. Multiply.

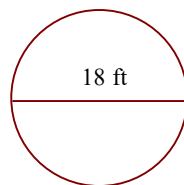
$$(-2.35)(-2.3)$$

$$(-2.35)(-2.3) = \boxed{\phantom{000}} \text{ (Type an integer or a decimal.)}$$

Answer: 5.405

35.

Find the circumference of the circle in terms of  $\pi$ . Then use the approximation 3.14 for  $\pi$  and approximate the circumference.



a. Find the circumference of the circle in terms of  $\pi$ .

The exact circumference is  ft.

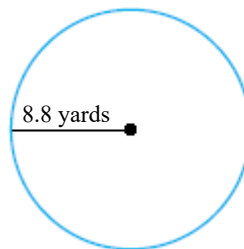
b. Find the circumference of the circle using 3.14 as an approximation for  $\pi$ .

The approximate circumference is  ft. (Round to the nearest hundredth as needed.)

Answers  $18\pi$

56.52

36. Find the circumference of the circle in terms of  $\pi$ . Then use the approximation 3.14 for  $\pi$  and approximate the circumference.



a. Find the circumference of the circle in terms of  $\pi$ .

The exact circumference is  yd.

b. Find the circumference of the circle using 3.14 as an approximation for  $\pi$ .

The approximate circumference is  yd. (Round to the nearest thousandth as needed.)

Answers  $17.6\pi$

55.264



37. A 1-ounce serving of cream cheese contains 9.8 grams of saturated fat. How much saturated fat is in 12 ounces of cream cheese?

g

Answer: 117.6

38. The screen of a portable digital device is a rectangle that measures 4.5 inches by 3.6 inches. Find the area of the screen.

The area is  square inches. (Type an integer or a decimal.)

Answer: 16.2

39. The diameter of a ferris wheel is 310 feet. Find its circumference. Give an exact answer and an approximation using 3.14 for  $\pi$ .

The circumference is  feet.  
(Type an exact answer in terms of  $\pi$ .)

The circumference is approximately  feet.  
(Type an integer or a decimal. Round to the nearest hundredth as needed.)

Answers  $310\pi$

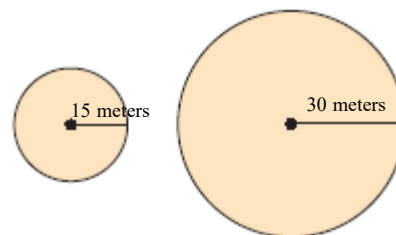
973.40

40. A meter is a unit of length approximately equal to 39.37 inches. If someone is 1.83 meters tall, what is his or her approximate height in inches?

Using the given conversion, someone who is 1.83 meters tall has a height of  inches.  
(Type an integer or a decimal.)

Answer: 72.0471

41. Consider the circles at the right.



- a. Approximate the circumference of each circle. Use  $\pi = 3.14$ .

The circumference of the smaller circle is approximately  meters.

(Round to the nearest hundredth as needed.)

The circumference of the larger circle is approximately  meters.

(Round to the nearest hundredth as needed.)

- b. If the radius of a circle is doubled, is its corresponding circumference also doubled?

Yes

No

Answers 94.20

188.40

Yes

42. Find the decimal equivalent of the following fraction.

$$\frac{13}{20}$$

$$\frac{13}{20} = \text{  }$$

Answer: 0.65

43. Solve the following equation.

$$8.9x = -83.66$$

$$x = \text{  } \text{ (Type an integer or a decimal.)}$$

Answer: -9.4

44. Solve the following equation.

$$4.2y + 8.2 = 6.2y - 5.1$$

The solution is . (Type an integer or a decimal.)

Answer: 6.65

45. Find the mean, median, and mode for the following set of numbers. If necessary, round the mean to one decimal place.

16, 11, 21, 13, 19

The mean is .

(Type an integer or decimal rounded to one decimal place as needed. Use a comma to separate answers as needed.)

The median is .

(Type an integer or decimal rounded to one decimal place as needed. Use a comma to separate answers as needed.)

Find the mode. Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The mode is .
- (Type an integer or decimal rounded to one decimal place as needed. Use a comma to separate answers as needed.)
- B. There is no mode.

Answers 16

16

B. There is no mode.

46. Solve the proportion.

$$\frac{7}{8} = \frac{x}{16}$$

x =  (Type an integer or a simplified fraction.)

Answer: 14

47. Medication is prescribed in 4 out of every 10 hospital emergency room visits that involve an injury. If a large urban hospital had 910 emergency room visits involving an injury in the past month, how many of these visits would you expect included a prescription for medication?

About  of these visits would be expected to include a prescription for medication.

Answer: 364

48. What is the sales tax on a jacket priced at \$350 if the sales tax rate is 7%?

The sales tax is \$ .

Answer: 24.50

49. A stereo normally priced at \$479 is on sale for 10% off. Find the discount and the sale price.

The discount is \$ .

The sale price is \$ .

Answers 47.90

431.10

50. A company borrows \$92,000 for 10 years at a simple interest rate of 10.5%. Find the interest paid on the loan and the total amount paid.

The interest paid on the loan is \$ .

The total amount paid is \$ .

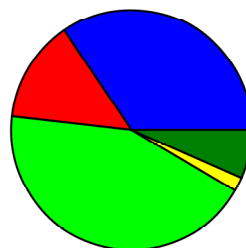
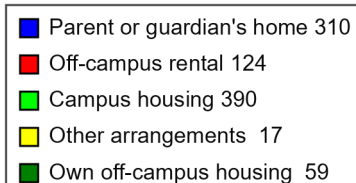
Answers 96,600

188,600

51. The circle graph is a result of surveying 900 college students. They were asked where they live while attending college. Use this graph to find where most of these college students live.

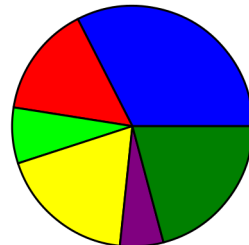
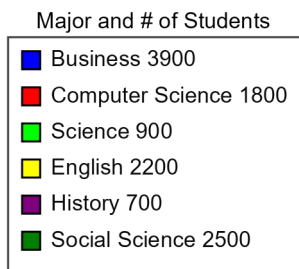
Choose the correct answer below.

- A. Own off-campus housing  
 B. Campus housing  
 C. Parent or guardian's home  
 D. Off-campus rental  
 E. Other arrangements



Answer: B. Campus housing

52. The circle graph shows the number of students at Rockford College who are enrolled in various majors. Find the ratio of History majors to English majors.

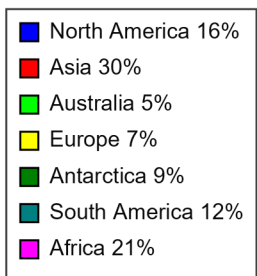
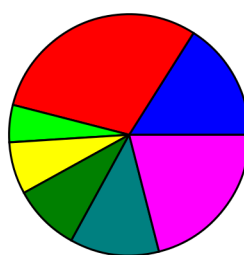


The ratio is .  
(Type an integer or a simplified fraction.)

Answer:  $\frac{7}{22}$

53. The following circle graph shows the relative sizes of the continents of Earth.

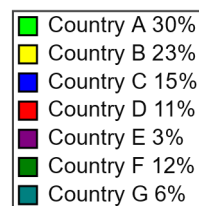
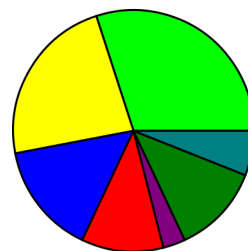
What percent of the land on Earth is accounted for by Australia and North America together?



%

Answer: 21

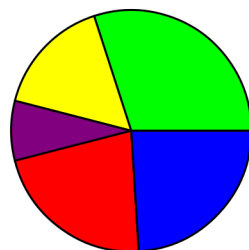
54. The total amount of land of some particular countries is approximately 57,000,000 square miles. Use the graph to find the area of the Country F.



The area of the Country F is approximately  square miles.

Answer: 6,840,000

55. The circle graph to the right shows the percent of the types of books available in a library.



<span style="color: green;">■</span>	Adult's fiction 30%
<span style="color: yellow;">■</span>	Reference 16%
<span style="color: purple;">■</span>	Other 8%
<span style="color: red;">■</span>	Children's fiction 22%
<span style="color: blue;">■</span>	Nonfiction 24%

What percent of books are classified as some type of fiction?

The percent of books which are classified as some type of fiction is  %.

Answer: 52

56. If this library has 190,000 books, find how many books are in the category of reference or other?



<span style="color: blue;">■</span>	Nonfiction 25%
<span style="color: red;">■</span>	Children's fiction 22%
<span style="color: green;">■</span>	Adult's fiction 33%
<span style="color: yellow;">■</span>	Reference 17%
<span style="color: purple;">■</span>	Other 3%

The number of books in the reference or other category is  books.

Answer: 38,000

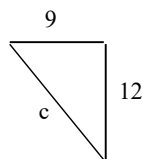
57. Find the square root.

$$\sqrt{25}$$

$$\sqrt{25} = \text{input box}$$

Answer: 5

58. Find the length of the third side of the right triangle.



The length of the third side is .

Answer: 15

59. Sketch the right triangle and find the length of the side not given. If necessary, approximate the length to the nearest thousandth.

$$\text{leg} = 12, \text{leg} = 5$$

What is the length of the side not given?

(Round to the nearest thousandth as needed.)

Answer: 13

60. Sketch the right triangle and find the length of the side not given.

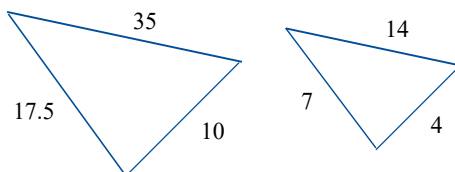
$$\text{leg} = 5, \text{hypotenuse} = 13$$

The unknown length is .

(Type an integer or decimal rounded to the nearest thousandth as needed.)

Answer: 12

61. Find the ratio of the corresponding sides of the given similar triangles.

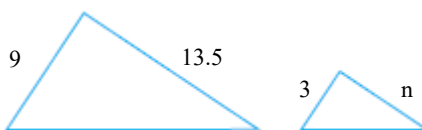


The ratio of the corresponding sides of the first triangle to the second triangle is .

(Type the ratio as a simplified fraction.)

Answer:  $\frac{5}{2}$

62. Given that the pair of triangles is similar, find the length of the side labeled n.



n =

Answer: 4.5

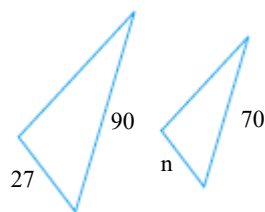
63. Given that the pair of triangles is similar, find the unknown length of the side labeled with a variable.



The unknown length is  unit(s).

Answer: 6

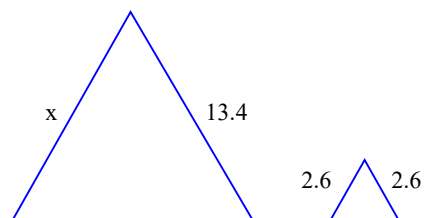
64. Given that the pair of triangles is similar, find the length of the side labeled  $n$ .



$n =$

Answer: 21

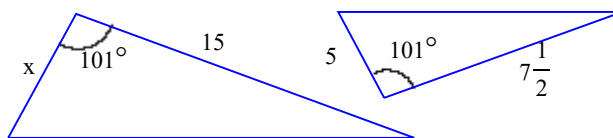
65. Given that the pair of triangles is similar, find the unknown length of the side labeled with a variable.



The unknown length is  unit(s).

Answer: 13.4

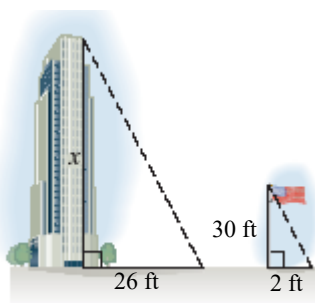
66. Given that the pair of triangles is similar, find the unknown length of the side labeled with a variable.



The unknown length is  unit(s).

Answer: 10

67. A triangle is formed by the building's height and shadow. Another triangle is formed by the flagpole's height and shadow. Using the following diagram, find the height of the building.

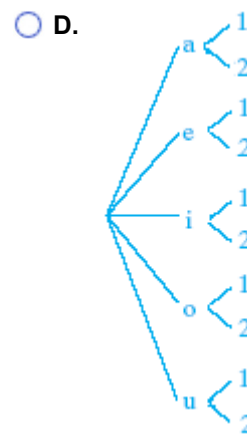
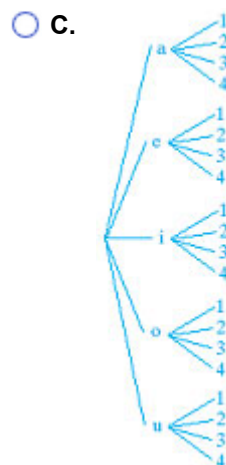
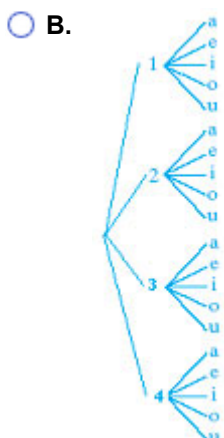
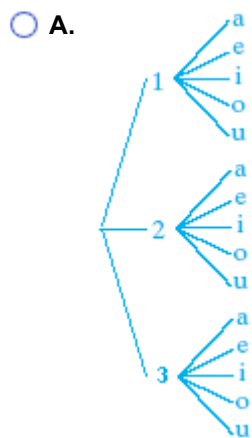


The height of the building is  feet.

Answer: 390

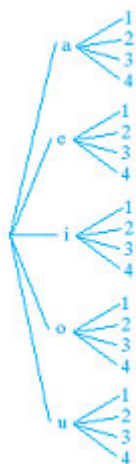


68. Draw a tree diagram for choosing a vowel, (a, e, i, o, u) and then a number (1, 2, 3 or 4). Use the diagram to find the number of possible outcomes.



Based on the tree, what is the number of possible outcomes?

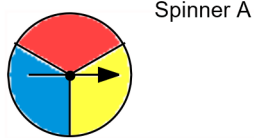
Answers



C.

20

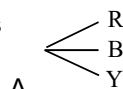
69. Draw a tree diagram for spinning Spinner A 1 time. Use the diagram to find the number of possible outcomes.



Spinner A

Based on the tree, what is the number of possible outcomes?

Answers



A.

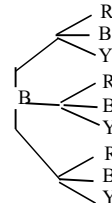
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Choose the correct tree diagram below.

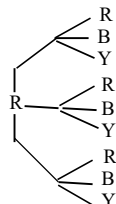
A.



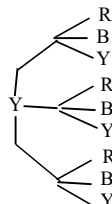
B.



C.

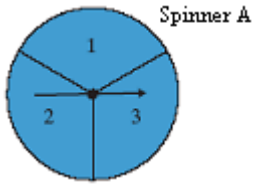


D.



70.

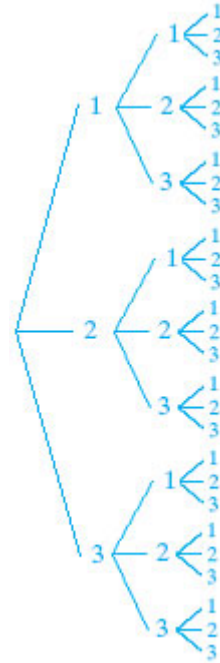
Draw a tree diagram for spinning Spinner A three times.  
Use the diagram to find the number of possible outcomes.



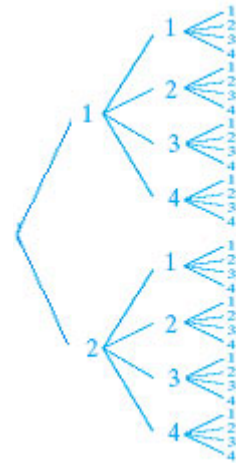
Based on the tree, what is the number of possible outcomes?

Choose the correct tree diagram below.

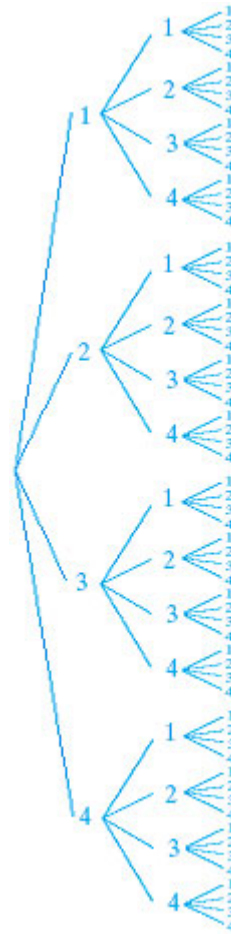
A.



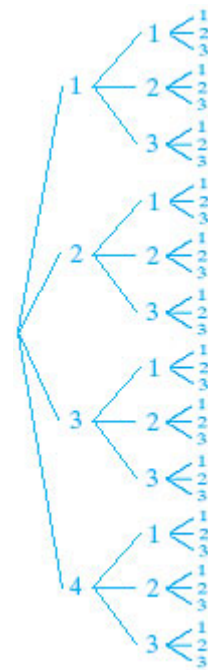
B.



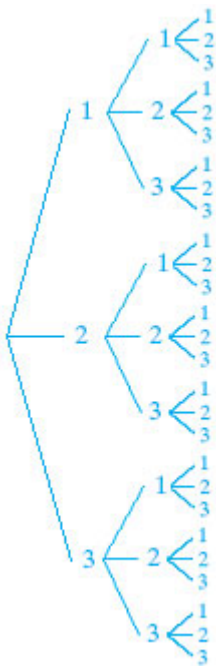
C.



D.



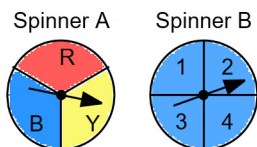
Answers



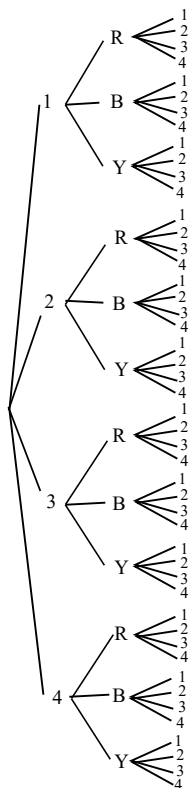
A.

27

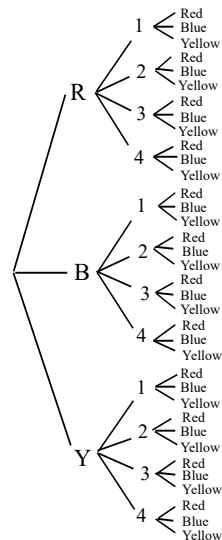
71. Draw a tree diagram for spinning Spinner A one time and then Spinner B one time. Use the diagram to find the number of possible outcomes.



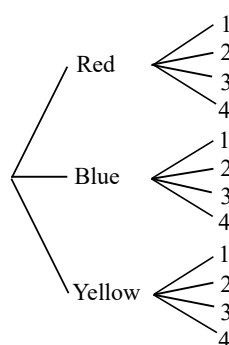
A.



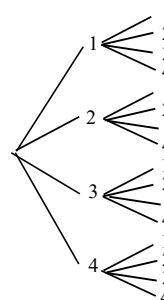
B.



C.

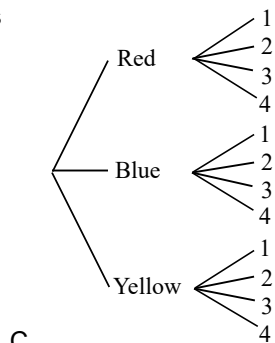


D.



Based on the tree, what is the number of possible outcomes?

Answers



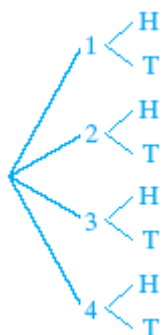
C.

12

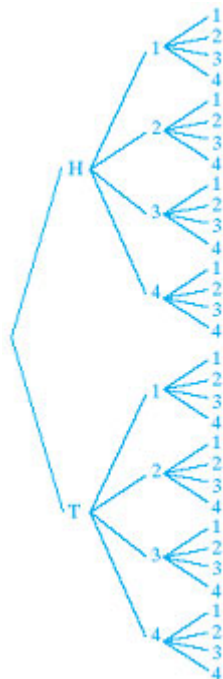
72. Draw a tree diagram for tossing a coin two times and spinning Spinner B one time. Use the diagram to find the number of possible outcomes.



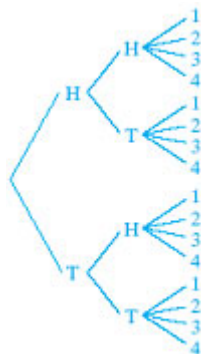
A.



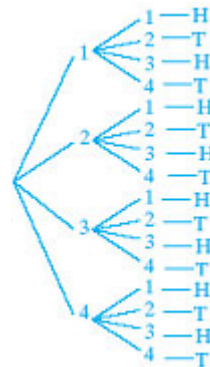
B.



C.

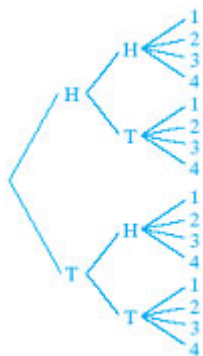


D.



Based on the tree, what is the number of possible outcomes?

Answers



C.

16

73. If a single 20-sided die is tossed once, find the probability of rolling a 20.

The probability is . (Type an integer or a simplified fraction.)

Answer:  $\frac{1}{20}$

74. If a single 12-sided die is tossed once, find the probability of rolling a 6 or a 1.

The probability is . (Type an integer or a simplified fraction.)

Answer:  $\frac{1}{6}$

75. If a single 6-sided die is tossed once, find the probability of rolling an odd number.

The probability is . (Type an integer or a simplified fraction.)

Answer:  $\frac{1}{2}$

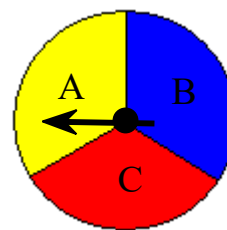
76. Suppose the spinner shown is spun once. Find the probability of spinning blue.



The probability is . (Type an integer or a simplified fraction.)

Answer:  $\frac{1}{3}$

77. Suppose that the spinner shown is spun once. Find the probability of the event that the result of a spin is A, B, or C.

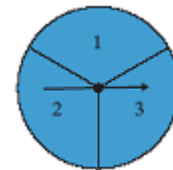


The probability is .

(Simplify your answer.)

Answer: 1

78. Suppose the spinner shown is spun once. Find the probability of spinning an even number.



The probability is . (Type an integer or a simplified fraction.)

Answer:  $\frac{1}{3}$

79. A marble is selected at random from a jar containing 5 red marbles, 3 yellow marbles, and 6 green marbles.

What is the probability that the marble is red?

The probability that the marble is red is . (Type an integer or a simplified fraction.)

Answer:  $\frac{5}{14}$

80. A new drug is being tested that is supposed to lower blood pressure. This drug was given to 100 people and the results are as follows.

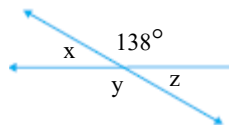
Lower Blood Pressure	Higher Blood Pressure	Blood Pressure Not Changed
29	28	43

If a person is testing this drug, what is the probability that their blood pressure will be higher?

The probability is . (Type an integer or a simplified fraction.)

Answer:  $\frac{7}{25}$

81. Find the measures of angles  $x$ ,  $y$ , and  $z$  in the figure.



The measure of angle  $x$  is °.

The measure of angle  $y$  is °.

The measure of angle  $z$  is °.

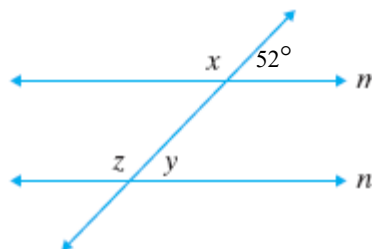
Answers 42

138

42



82. Find the measures of angles  $x$ ,  $y$ , and  $z$  in the figure.  $m \parallel n$ .



$\angle x = \boxed{\phantom{000}}^\circ$

$\angle z = \boxed{\phantom{000}}^\circ$

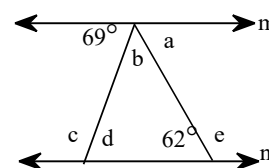
$\angle y = \boxed{\phantom{000}}^\circ$

Answers 128

128

52

83. If lines  $m$  and  $n$  are parallel, find the measures of angles  $a$  through  $e$ .



Complete the following table.

$m\angle a =$	<input type="text"/>	$^\circ$
$m\angle b =$	<input type="text"/>	$^\circ$
$m\angle c =$	<input type="text"/>	$^\circ$
$m\angle d =$	<input type="text"/>	$^\circ$
$m\angle e =$	<input type="text"/>	$^\circ$

Answers 62

49

111

69

118

84. Find the perimeter of the following figure.



---

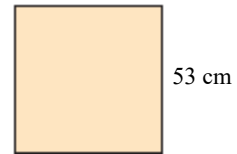
Perimeter =  (1)

- (1)  cm  
 sq. cm

Answers 156

(1) cm

- 
85. Find the perimeter of the regular polygon shown to the right.



---

Perimeter =  (1)

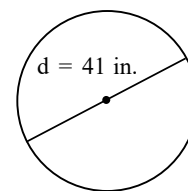
- (1)  cm  
 sq cm

Answers 212

(1) cm

---

86. Find the area of the given geometric figure. If the figure is a circle, give an exact area and then use 3.14 as an approximation for  $\pi$  to approximate the area.



The exact area of the circle is  (1)   
(Simplify your answer. Type an exact answer in terms of  $\pi$ .)

The approximate area of the circle is  (2)   
(Simplify your answer. Type an integer or decimal rounded to the nearest thousandth as needed.)

- (1)  in.      (2)  sq in.  
 cu in.       cu in.  
 sq in.       in.

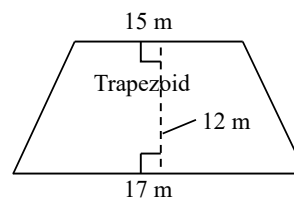
Answers  $420.25\pi$

(1) sq in.

1319.585

(2) sq in.

87. Find the area of the given geometric figure.



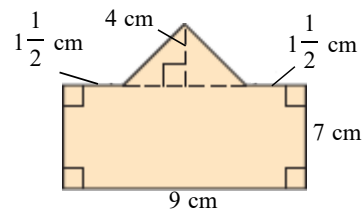
The area of the trapezoid is  (1)   
(Simplify your answer.)

- (1)  cu m.  
 m.  
 sq m.

Answers 192

(1) sq m.

88. Find the area of the geometric figure.



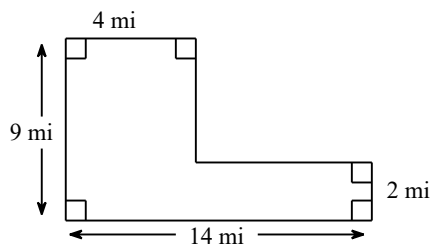
The area is  (1) . (Simplify your answer.)

- (1)  centimeters  
 square centimeters  
 cubic centimeters

Answers 75

(1) square centimeters

89. Find the area of the given geometric figure.



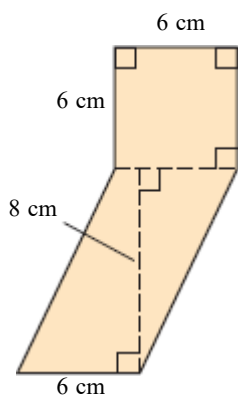
The area of the figure is  (1)   
(Simplify your answer.)

- (1)  mi.  
 cu mi.  
 sq mi.

Answers 56

(1) sq mi.

90. Find the area of the geometric figure.



- (1)  centimeters  
 square centimeters  
 cubic centimeters

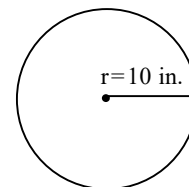
Answers 84

(1) square centimeters

The area is  (1) .

(Simplify your answer.)

91. Find the area of the given geometric figure. If the figure is a circle, give an exact area and then use  $\frac{22}{7}$  as an approximation for  $\pi$  to approximate the area.



The exact area of the circle is  (1) .

(Simplify your answer. Type an exact answer in terms of  $\pi$ .)

The approximate area is  (2) .

(Simplify your answer. Type an integer, proper fraction, or a mixed number.)

- (1)  cu in.      (2)  sq in.  
 in.                       in.  
 sq in.                       cu in.

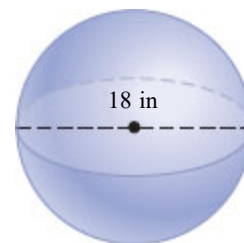
Answers  $100\pi$

(1) sq in.

$314\frac{2}{7}$

(2) sq in.

92. Find the volume and surface area of the solid. Give an exact answer and then approximate using  $\frac{22}{7}$  for  $\pi$ .



The exact volume is  (1) .

(Simplify your answer. Type an exact answer in terms of  $\pi$ .)

The approximate volume is  (2) .

(Simplify your answer.)

The exact surface area is  (3) .

(Simplify your answer. Type an exact answer in terms of  $\pi$ .)

The approximate surface area is  (4) .

(Simplify your answer.)

- |                                     |                                     |                                     |                                     |
|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| (1) <input type="radio"/> inches    | (2) <input type="radio"/> inches    | (3) <input type="radio"/> inches    | (4) <input type="radio"/> inches    |
| <input type="radio"/> square inches | <input type="radio"/> square inches | <input type="radio"/> square inches | <input type="radio"/> square inches |
| <input type="radio"/> cubic inches  | <input type="radio"/> cubic inches  | <input type="radio"/> cubic inches  | <input type="radio"/> cubic inches  |

Answers  $972\pi$

(1) cubic inches

$$3054\frac{6}{7}$$

(2) cubic inches

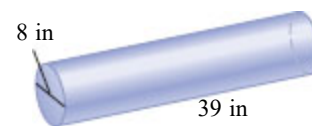
$$324\pi$$

(3) square inches

$$1018\frac{2}{7}$$

(4) square inches

93. Find the volume of the solid. Give an exact volume and then approximate using  $\frac{22}{7}$  for  $\pi$ .



The exact volume is  (1) .

(Simplify your answer. Type an exact answer in terms of  $\pi$ .)

The approximate volume is  (2) .

(Simplify your answer. Type an integer, fraction, or mixed number.)

- (1)  inches                      (2)  inches  
 square inches                       square inches  
 cubic inches                               cubic inches

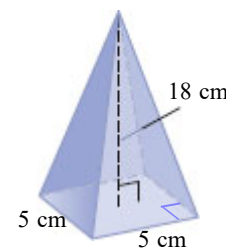
Answers  $624\pi$

(1) cubic inches

$1961\frac{1}{7}$

(2) cubic inches

94. Find the volume of the solid.



The volume is  (1) .

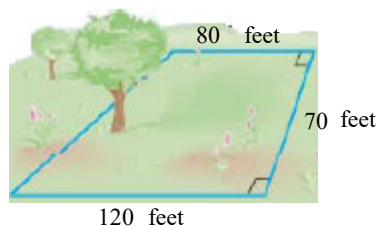
(Simplify your answer.)

- (1)  centimeters  
 square centimeters  
 cubic centimeters

Answers 150

(1) cubic centimeters

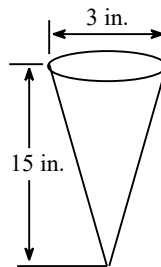
95. Find how many square feet of land are in the plot shown on the right.



The area is  square feet.  
(Simplify your answer.)

Answer: 7000

96. Find the exact volume of a waffle ice cream cone with a 3-in. diameter and a height of 15 inches.



The exact volume of the waffle ice cream cone is  (1)   
(Type an exact answer in terms of  $\pi$ . Use integers or decimals for any numbers in the expression.)

- (1)  sq in.  
 in.  
 cu in.

Answers  $11.25\pi$

(1) cu in.

97. A computer has shape of a rectangular solid. Find the volume of the computer, with dimensions of 5 inches by 5 inches by 5.7 inches.

The volume of the computer is  (1)   
(Simplify your answer. Type an integer or a decimal.)

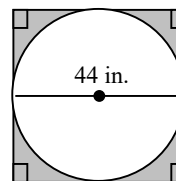
- (1)  in.  
 cu in.  
 sq in.

Answers 142.5

(1) cu in.



98. Find the area of the shaded region. Use the approximation 3.14 for  $\pi$ .



The area of the shaded region is approximately  (1)   
 (Simplify your answer. Type an integer or a decimal.)

- (1)  in.  
 sq in.  
 cu in.

Answers 416.24

(1) sq in.

99. Solve the equation.

$$-5y + 2 = -4(2y + 4)$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A.  $y =$   (Type an integer or a simplified fraction.)  
 B. The solution is all real numbers.  
 C. There is no solution.

Answer: A.  $y =$   (Type an integer or a simplified fraction.)

100. Solve the equation.

$$13x - 5 = 1 + 10x$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A.  $x =$    
 B. The solution is all real numbers.  
 C. There is no solution.

Answer: A.  $x =$

101. Solve the equation.

$$-5(2x - 6) = 5x$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A.  $x =$  \_\_\_\_\_ (Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

Answer: A.  $x =$   (Simplify your answer.)

102. Solve the equation for  $x$ .

$$9(x - 4) + 2 = -34$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A.  $x =$  \_\_\_\_\_ (Simplify your answer. Type an integer or a fraction.)
- B. The solution is all real numbers.
- C. There is no solution.

Answer: A.  $x =$   (Simplify your answer. Type an integer or a fraction.)

103. Solve the equation.

$$5 - 2(a - 1) = 4 + a$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A.  $a =$  \_\_\_\_\_ (Simplify your answer. Type an integer or a fraction.)
- B. The solution is all real numbers.
- C. There is no solution.

Answer: A.  $a =$   (Simplify your answer. Type an integer or a fraction.)

104. Solve the equation.

$$-2y - 15 = 5y + 13$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A.  $y =$  \_\_\_\_\_ (Type an integer or a simplified fraction.)
- B. The solution is all real numbers.
- C. There is no solution.

Answer: A.  $y =$   (Type an integer or a simplified fraction.)

105. Solve the equation.

$$\frac{2}{7}x + \frac{5}{7} = -\frac{1}{7}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A.  $x =$  \_\_\_\_\_
- B. The solution is all real numbers.
- C. There is no solution.

Answer: A.  $x =$

106. Solve the equation for  $x$ .

$$5(5x - 3) = 25x - 15$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A.  $x =$  \_\_\_\_\_ (Type an integer or a fraction. Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

Answer: B. The solution is all real numbers.

107. Solve the equation for  $x$ .

$$8x - 9 = 8(x - 1)$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A.  $x =$  \_\_\_\_\_ (Type an integer or a simplified fraction.)
- B. The solution is all real numbers.
- C. There is no solution.

Answer: C. There is no solution.

108. Solve.

$$0.8x - 4.1 = 0.7$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A.  $x =$  \_\_\_\_\_ (Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

Answer: A.  $x =$   (Simplify your answer.)

109. Solve the equation.

$$8x - 23 = 7x - 23$$

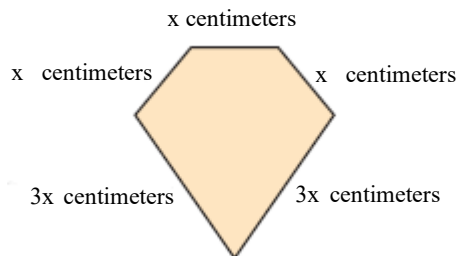
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A.  $x =$  \_\_\_\_\_
- B. The solution is all real numbers.
- C. There is no solution.

Answer: A.  $x =$

110. The perimeter of a geometric figure is the sum of the lengths of its sides. The perimeter of the pentagon (five-sided figure) on the right is 45 centimeters.

- a. Write an equation for perimeter.  
 b. Solve the equation in part (a).  
 c. Find the length of each side.



a. Choose the correct answer below.

- A.  $9x^5 = 45$
- B.  $x + x + x + 3x + 3x = 45$
- C.  $x + x + x + 3x + 3x = 9$
- D.  $x + x + x + x + x = 45$

b.  $x =$   (Simplify your answer.)

c. The shorter sides have a length of  (1)  (Simplify your answer.)

The longer sides have a length of  (2)  (Simplify your answer.)

- (1)  cm.      (2)  cm.  
  $\text{cm}^2$ .        $\text{cm}^2$ .

Answers B.  $x + x + x + 3x + 3x = 45$

5

5

(1) cm.

15

(2) cm.

111. A toy ball in the shape of a sphere expands and contracts. When it is completely closed, it has a diameter of 8.5 inches. Find the volume of the sphere when it is completely closed. Use 3.14 for  $\pi$ .

(Hint: the volume of a sphere of radius  $r$  is  $\frac{4}{3}\pi r^3$ .)

The volume of the sphere is approximately  (1)

(Round to the nearest whole number as needed.)

- (1)  in.  
 cu in.  
 sq in.

Answers 321

(1) cu in.

112. Substitute the given values into the given formula and solve for the unknown variable.

$$V = \frac{4}{3}\pi r^3, r = 2 \text{ (Volume of a sphere) (Use a calculator approximation for } \pi\text{.)}$$

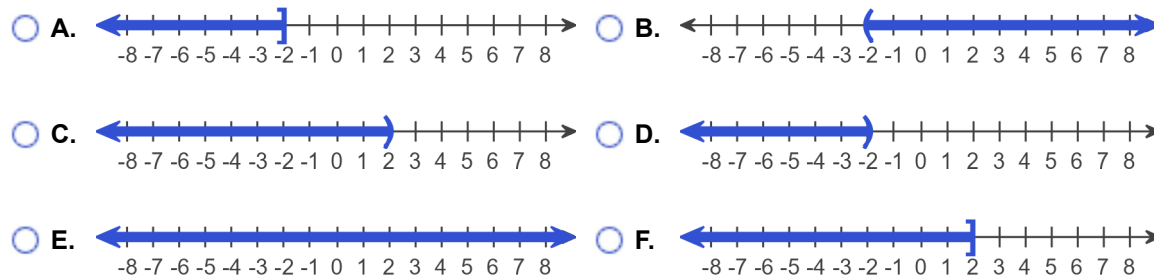
$V \approx$  . (Type an integer or a decimal. Round to the nearest tenth as needed.)

Answer: 33.5

113. Solve the inequality. Graph the solution set and write it in interval notation.

$$2x < -4$$

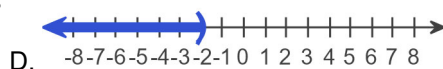
Choose the correct graph below.



The solution to the inequality  $2x < -4$  is .

(Type your answer in interval notation.)

Answers

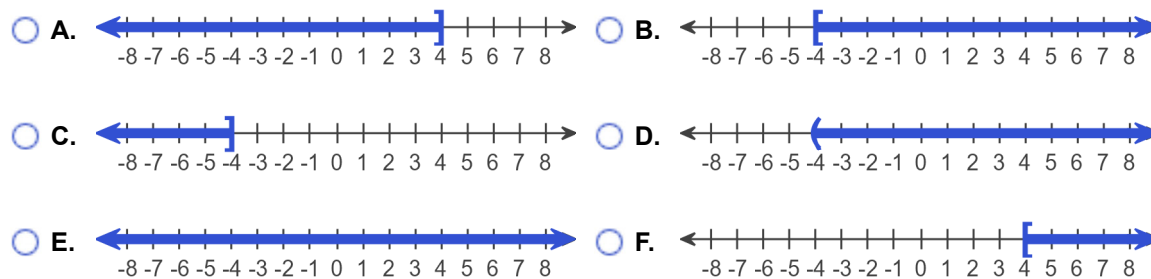


$(-\infty, -2)$

114. Solve the inequality. Graph the solution set and write it in interval notation.

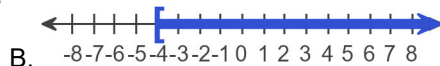
$$-8x \leq 32$$

Choose the correct graph below.



The solution to the inequality  $-8x \leq 32$  is .  
(Type your answer in interval notation.)

Answers

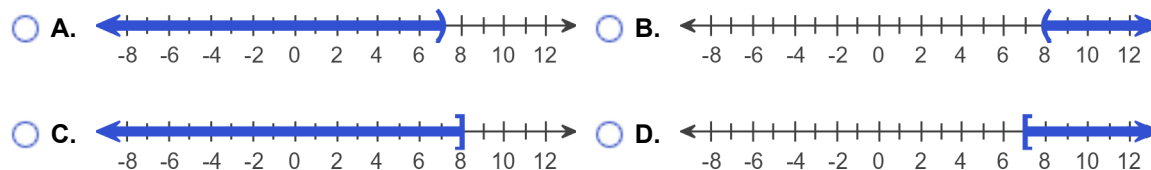


$[-4, \infty)$

115. Solve the inequality. Graph the solution set and write it in interval notation.

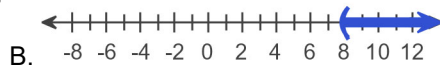
$$-0.7y < -5.6$$

Choose the correct graph below.



The solution set in interval notation is .

Answers



$(8, \infty)$

116. Solve the inequality.

$$2x - 5 < 8x + 25$$

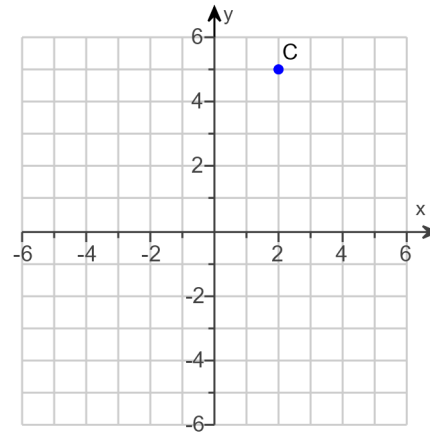
The solution set is . (Type your answer in interval notation.)

Answer:  $(-5, \infty)$

117.

Find the x- and y-coordinates of the point C.

The coordinates of C are .  
(Type an ordered pair.)



Answer: (2,5)

118.

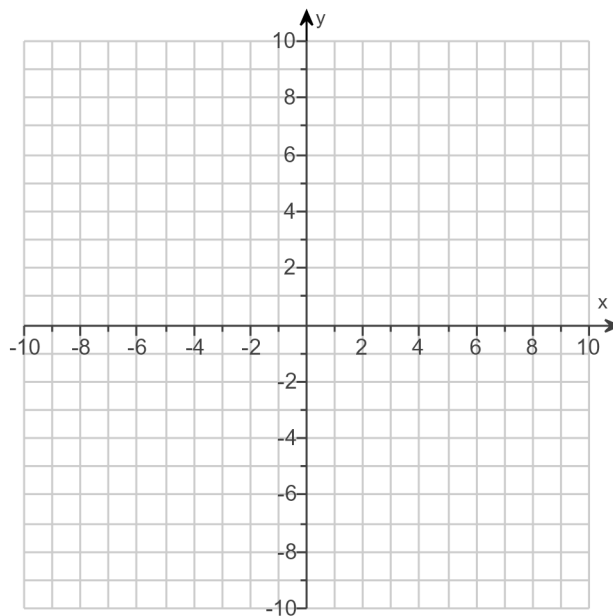
For the equation, find three ordered pair solutions by completing the table. Then use any two of the ordered pairs to graph the equation.

$$y = \frac{1}{2}x$$

Complete the table below.

x	y
0	
-2	
4	

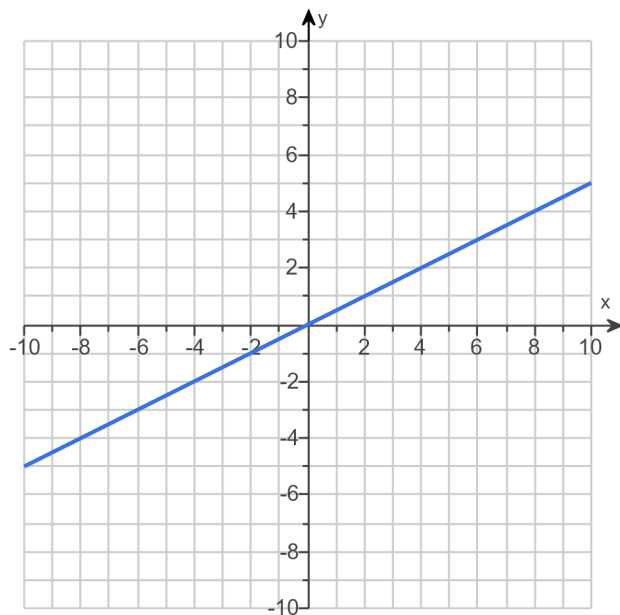
Use the graphing tool to graph the equation.



Answers 0

- 1

2





119.

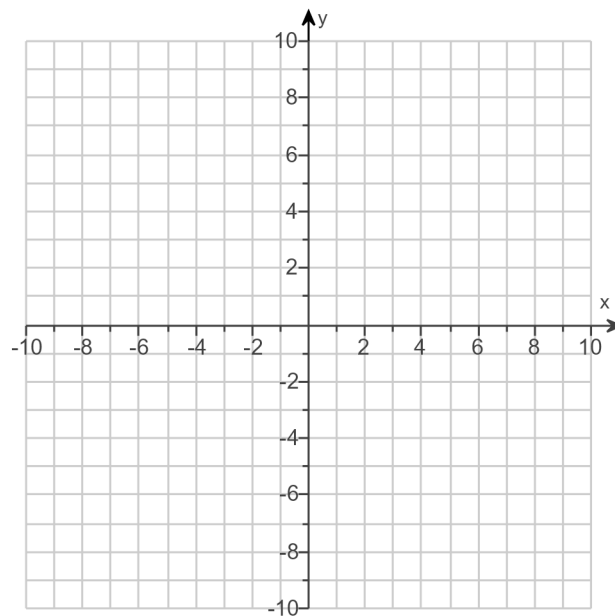
For the following equation, find three ordered pair solutions by completing the table. Then use the ordered pairs to graph the equation.

$$y = -2x + 3$$

Find three ordered pair solutions of the given equation.

x	y
0	<input type="text"/>
1	<input type="text"/>
2	<input type="text"/>

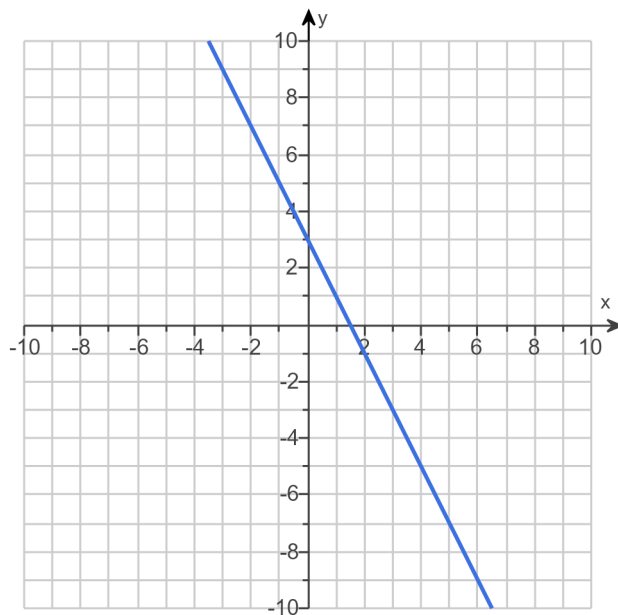
Use the graphing tool to graph the line.



Answers 3

1

-1

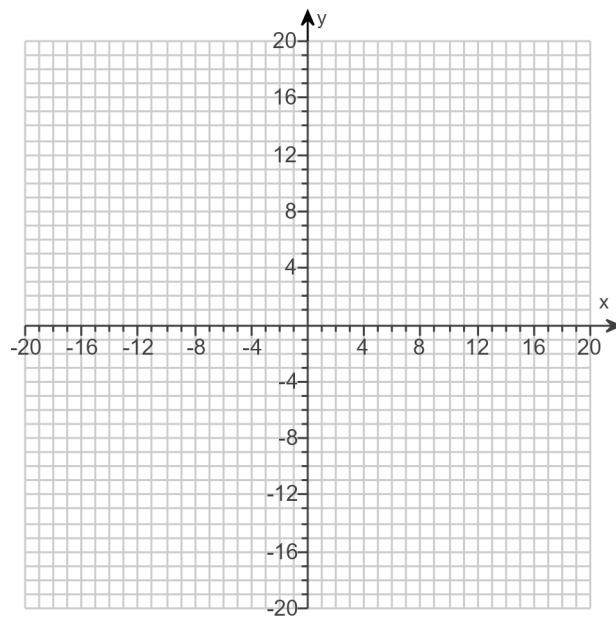


120.

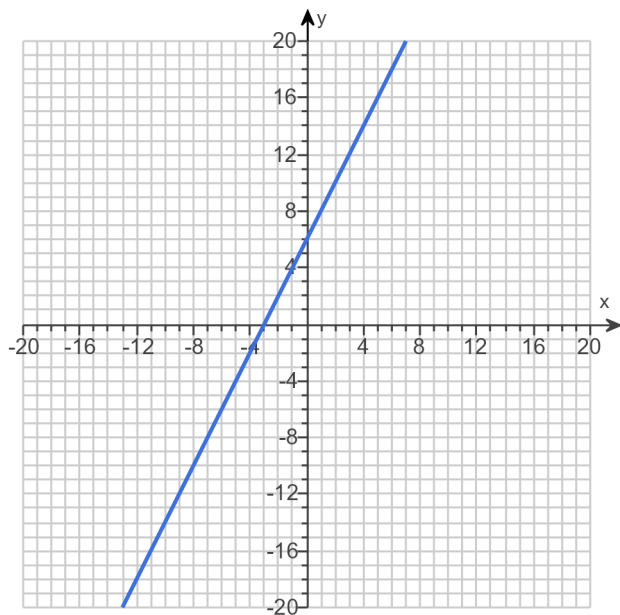
Graph the equation.

$$y = 2x + 6$$

Use the graphing tool to graph the line.



Answer:

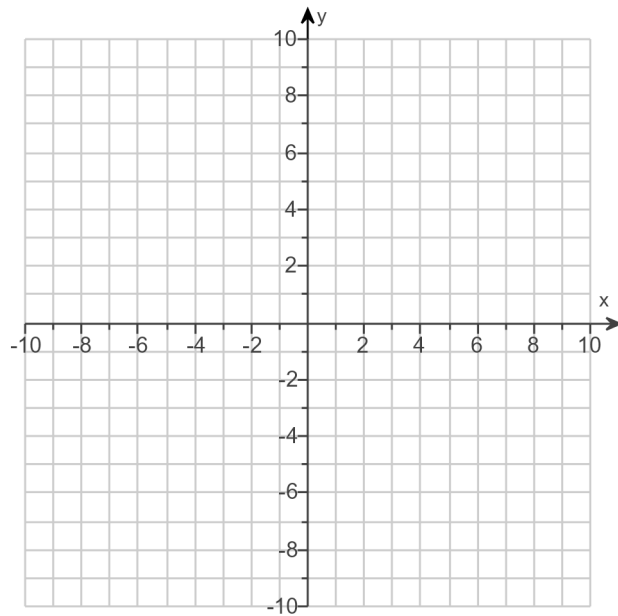


121.

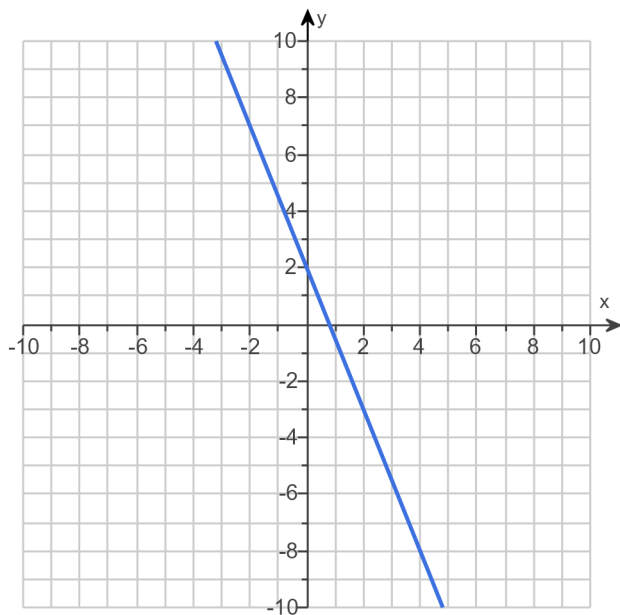
Graph the linear equation.

$$y = -2.5x + 2$$

Use the graphing tool to graph the equation.



Answer:



122.

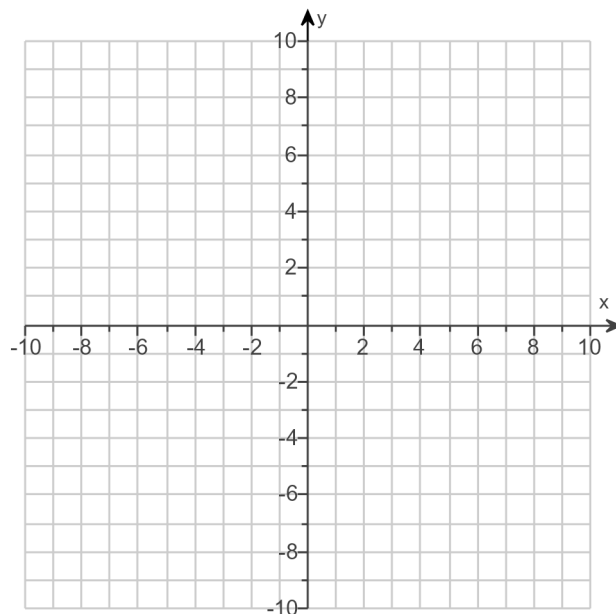
Write the statement as an equation in two variables. Then graph the equation.

The y-value is 3 more than the x-value.

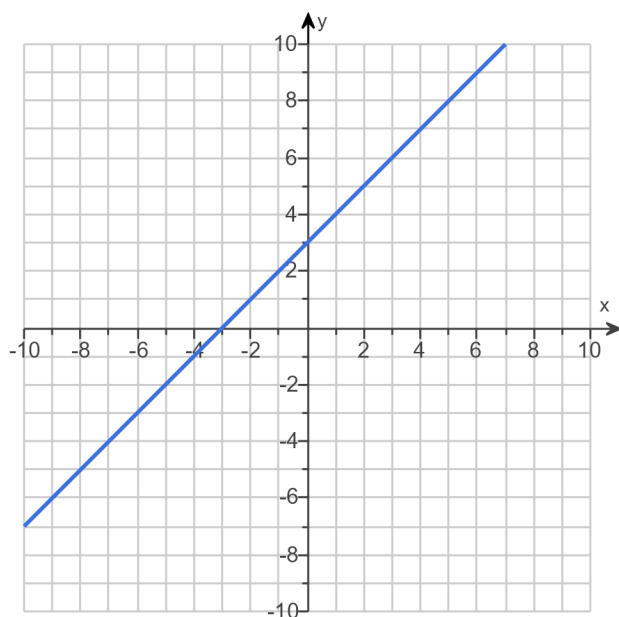
Write the statement as an equation in two variables.

(Type an equation using x and y as the variables.)

Use the graphing tool to graph the equation.



Answers  $y = x + 3$



123. Find the slope of the line that goes through the given points.

$(-10, -3)$  and  $(-8, -7)$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The slope is \_\_\_\_\_. (Type an integer or a simplified fraction.)

B. The slope is undefined.

Answer: A. The slope is . (Type an integer or a simplified fraction.)

124. Find the slope of the line that goes through the given points.

$(-8, 5)$  and  $(-8, -5)$

---

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The slope is \_\_\_\_\_. (Type an integer or a fraction. Simplify your answer.)
- B. The slope is undefined.

Answer: B. The slope is undefined.

---

125. Find the slope of the line that goes through the given points.

$(-10, 4)$  and  $(0, 1)$

---

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The slope is \_\_\_\_\_. (Simplify your answer.)
- B. The slope is undefined.

Answer: A. The slope is . (Simplify your answer.)

---

126. Find the slope of the line that goes through the given points.

$(4,5)$  and  $(8,5)$

---

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

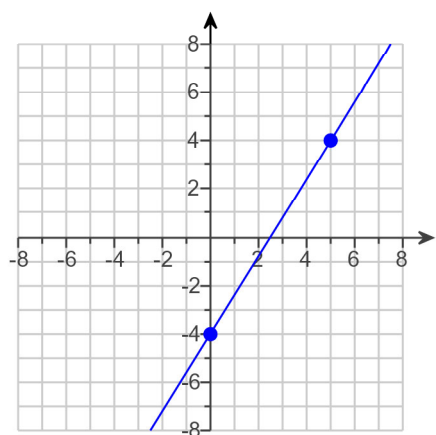
- A. The slope is \_\_\_\_\_. (Type an integer or a simplified fraction.)
- B. The slope is undefined.

Answer: A. The slope is . (Type an integer or a simplified fraction.)

---

127.

Find the slope of the line if it exists.



Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The slope is \_\_\_\_\_.  
(Simplify your answer. Type an integer or a fraction.)
- B. The slope is undefined.

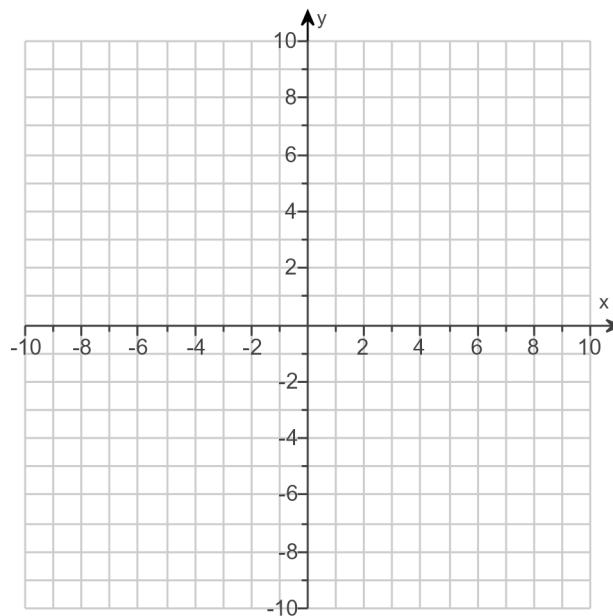
Answer: A. The slope is

 $\frac{8}{5}$ 

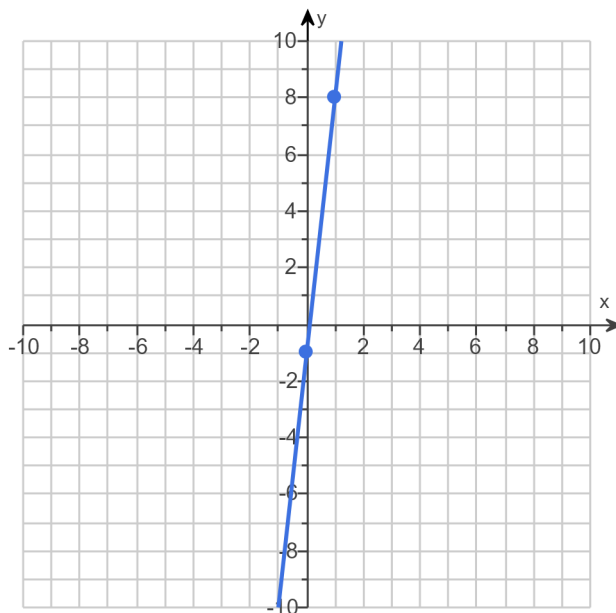
.(Simplify your answer. Type an integer or a fraction.)

128. Use the slope-intercept form to graph the equation  $y = 9x - 1$ .

Use the graphing tool to graph the line. Use the slope and y-intercept when drawing the line.



Answer:



129. Find the slope-intercept equation of the line that has the given characteristics.

Slope  $-5$  and y-intercept  $(0, 2)$

The equation is .

(Simplify your answer. Type your answer in slope-intercept form. Use integers or fractions for any numbers in the equation.)

Answer:  $y = -5x + 2$

130. Find the domain and the range of the given relation.

$$\{(7,6), (9, - 6), (5, - 3), (- 3,5)\}$$

The domain is . (Use a comma to separate answers as needed.)

The range is . (Use a comma to separate answers as needed.)

Answers 7,9,5, - 3

6, - 6, - 3,5

131. Find the domain and the range of the relation.

$$\{(8, - 4), (- 8, - 4), (10, - 4)\}$$

What is the domain of the given relation?

(Use a comma to separate answers as needed.)

What is the range of the given relation?

(Use a comma to separate answers as needed.)

Answers 8, - 8,10

- 4

132. Determine if the given relation is also a function.

$$\{(- 6, - 1), (9, - 4), (5,6), (- 2,3)\}$$

Is the relation a function?

- No  
 Yes

Answer: Yes

133. Determine if the given relation is also a function.

$$\{(- 9, - 2), (- 9, - 5), (- 9,1)\}$$

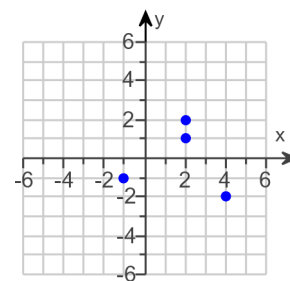
Is the relation a function?

- Yes  
 No

Answer: No



134. Determine whether the graph on the right is the graph of a function.

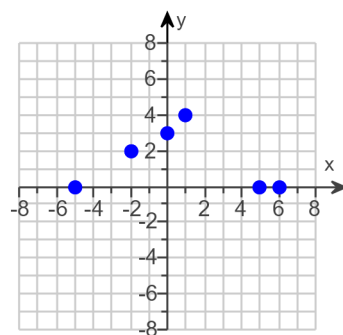


Is the given graph the graph of a function?

- Yes  
 No

Answer: No

135. Determine whether the graph is the graph of a function.



Is the given graph the graph of a function?

- No  
 Yes

Answer: Yes

136. Given the following function, find  $f(-3)$ ,  $f(0)$ , and  $f(3)$ .

$$f(x) = 5x + 5$$

$$f(-3) = \boxed{\phantom{00}}$$

$$f(0) = \boxed{\phantom{00}}$$

$$f(3) = \boxed{\phantom{00}}$$

Answers - 10

5

20

137. Given the following function, find  $f(-1)$ ,  $f(0)$ , and  $f(1)$ .

$$f(x) = x^2 - 4$$

---

$f(-1) =$

$f(0) =$

$f(1) =$

Answers - 3

- 4

- 3

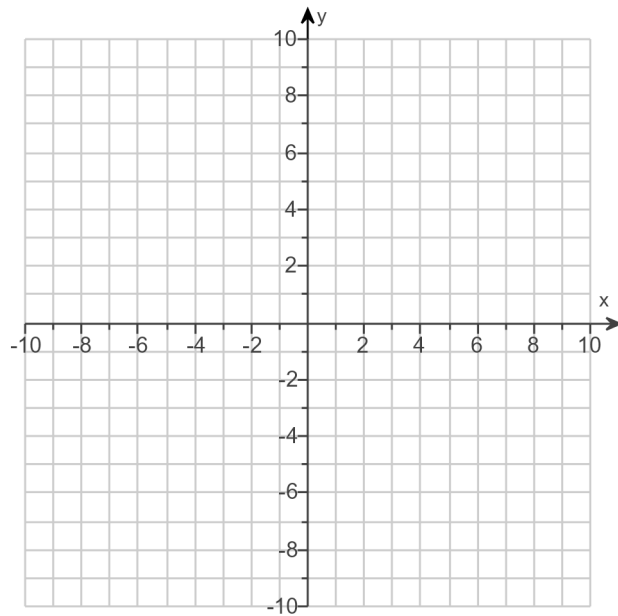
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138.

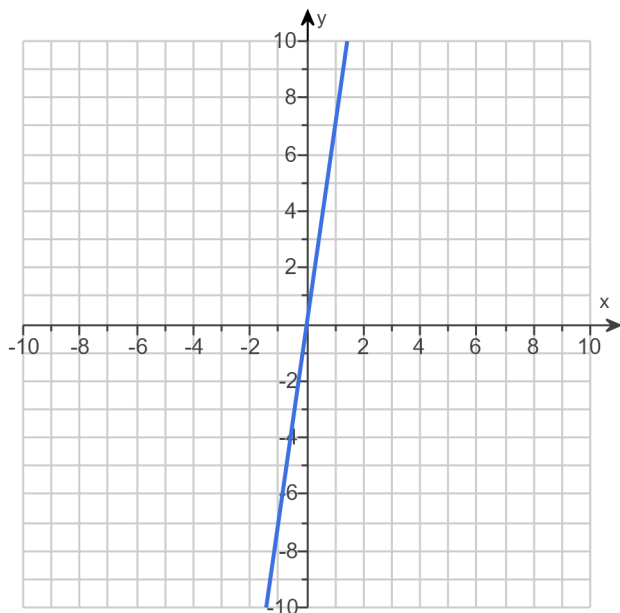
Graph the linear equation.

$$f(x) = 7x$$

Use the graphing tool to graph the equation.



Answer:

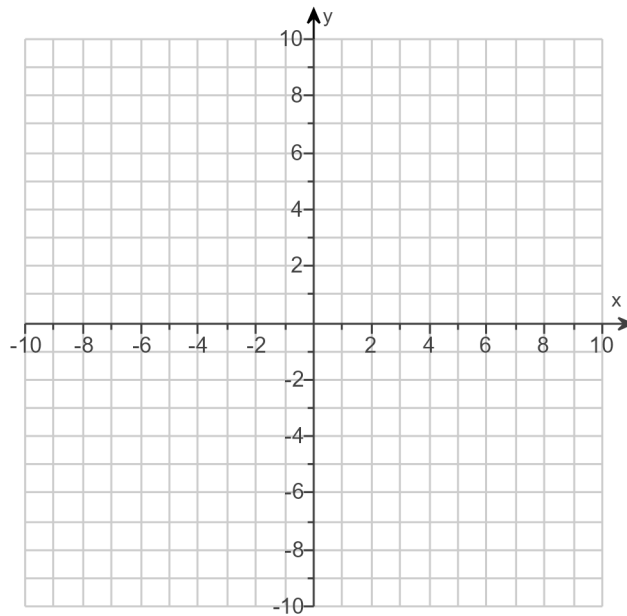


139.

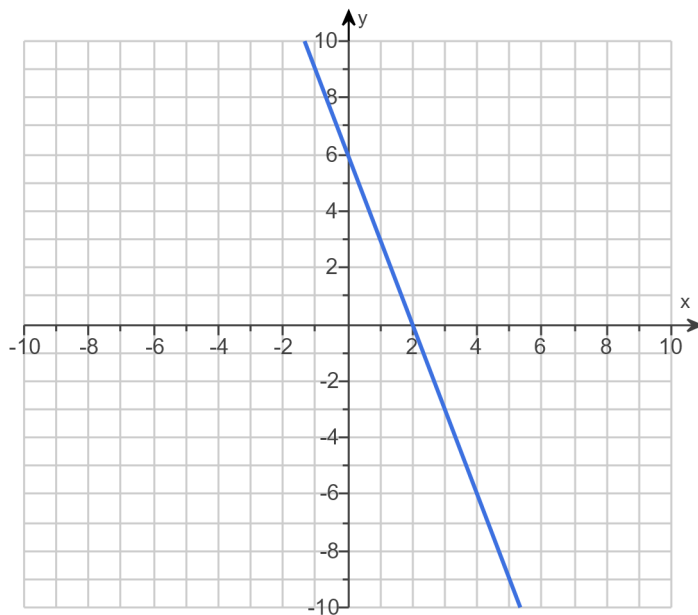
Graph the linear equation.

$$f(x) = -3x + 6$$

Use the graphing tool to graph the linear equation.



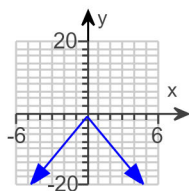
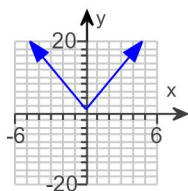
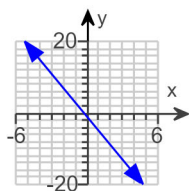
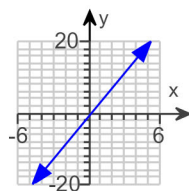
Answer:



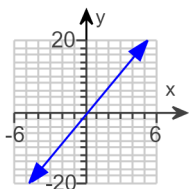
140. Graph the function.

$$f(x) = 4x - 1$$

Choose the correct graph below.

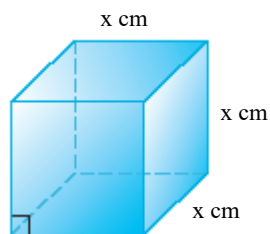
 A. B. C. D.

Answer:



D.

141. The function  $V(x) = x^3$  may be used to find the volume of a cube with side length  $x$ . Find the volume of a cube whose side is 6 centimeters.

The volume is  cubic centimeters. (Type an integer or a decimal.)

Answer: 216

142. If
- $y$
- varies directly as
- $x$
- , find the constant of variation
- $k$
- and the direct variation equation for the situation.

$$y = 9 \text{ when } x = 36$$

Find the constant of variation  $k$ .

$$k = \text{} \text{ (Type an integer or a fraction. Simplify your answer.)}$$

Complete the direct variation equation given  $y = 9$  when  $x = 36$ .

$$y = \text{} \text{ (Use integers or fractions for any numbers in the expression.)}$$

$$\text{Answers } \frac{1}{4}$$

$$\frac{1}{4}x$$

143. If  $y$  varies directly as  $x$ , find the constant of variation  $k$  and the direct variation equation for the situation.

$$y = 0.7 \text{ when } x = 1.3$$

Find the constant of variation  $k$ .

$k =$   (Round to one decimal place.)

Write the direct variation equation.

Answers 0.5

$$y = 0.5x$$

144.

The weight of a synthetic ball varies directly with the cube of its radius. A ball with a radius of 2 inches weighs 4.80 pounds. Find the weight of a ball of the same material with a 3-inch radius.



The weight of a ball of the same material with a 3-inch radius is  lb.  
(Type an integer or a decimal.)

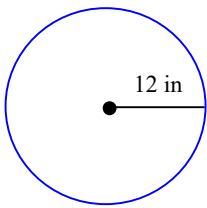
Answer: 16.20

145. The amount  $P$  of pollution varies directly with the population  $N$  of people. City A has a population of 416,000 and produces 260,000 tons of pollutants. Find how many tons of pollution we should expect City B to produce, if we know that its population is 350,000.

City B produces  tons of pollution.  
(Do not round until the final answer. Then round to the nearest ton as needed.)

Answer: 218,750

146. Find the exact circumference and area of the circle.



---

The exact circumference is  in.  
(Simplify your answer. Type an exact answer, using  $\pi$  as needed.)

The exact area is  sq in.  
(Simplify your answer. Type an exact answer, using  $\pi$  as needed.)

Answers  $24\pi$

$144\pi$

---

147.

Sketch the graph of the quadratic function and the axis of symmetry. State the vertex, and give the equation for the axis of symmetry.

$$F(x) = -x^2 - 5$$

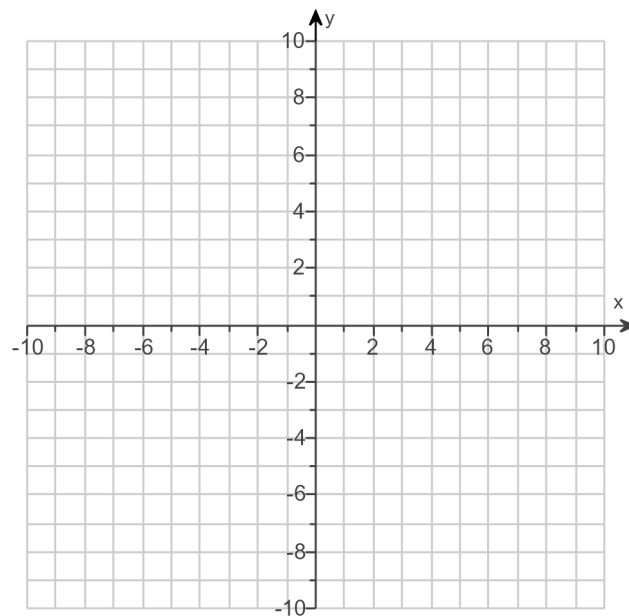
Use the graphing tool to graph the function as a solid curve and the axis of symmetry as a dashed line.

The vertex is .

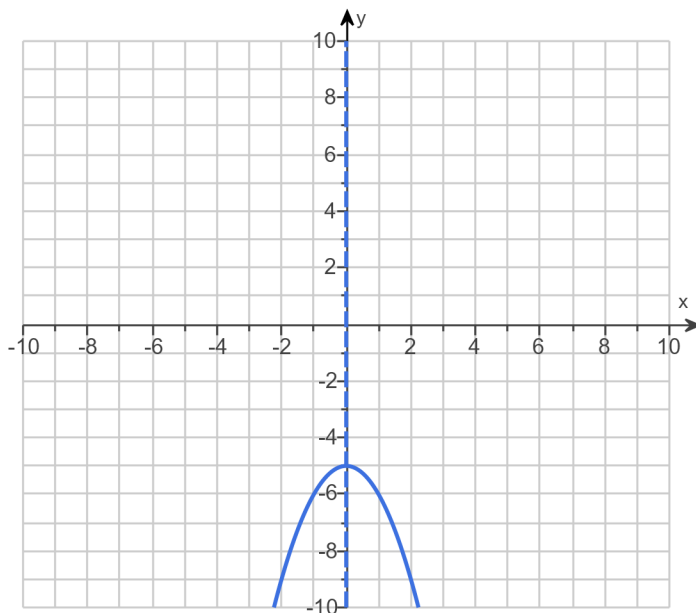
(Type an ordered pair.)

The axis of symmetry is .

(Type an equation.)



Answers



(0, -5)

$x = 0$