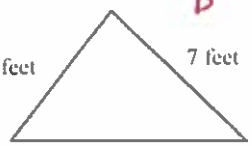
03-25-19
03-27-19

Student: _____	**Instructor:** Alfredo Alvarez	**Assignment:**
Date: _____	**Course:** Math 0410 / 0320 Alvarez	MATH7-8THSANANTFIESTA085MR

1. Find the perimeter of the figure.



A B C

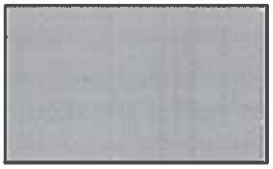
$P = A + B + C$
$P = 4 + 7 + 10$
$P = 11 + 10$
$P = 21$

The perimeter is _____ feet.

Answer: 21

add all the sides

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



L W

The area of the rectangle is _____ (1) _____

The perimeter of the rectangle is _____ (2) _____

(1) ○ square meters. ○ meters. ○ cubic meters.

(2) ○ cubic meters. ○ square meters. ○ meters.

$A = Lw$
$A = (6)(2)$
$A = 12$

$P = 2L + 2W$
$P = 2(6) + 2(2)$
$P = 12 + 4$
$P = 16$

Answers 12

(1) square meters.

16

(2) meters.

3. One triple fudge brownie contains 119 calories. How many calories are in 11 triple fudge brownies?

_____ calories

$\frac{1}{119} = \frac{11}{N}$

$1(N) = 119(11)$ cross mult

$N = 1309$

$119 \times 11 = 1309$

Answer: 1309

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

20, 24, 29, 22, 15, 16

$\frac{15+16+20+22+24+29}{6} =$

The average value is _____.

$\frac{126}{6} =$

$21 =$

Answer: 21

5. Evaluate the algebraic expression for the given value.

$x^2 - 4x + 6$, for $x = 7$

When $x = 7$, $x^2 - 4x + 6 =$ _____.
(Simplify your answer.)

Answer: 27

$x^2 - 4x + 6 =$
$(7)^2 - 4(7) + 6 =$
$(7)(7) - 4(7) + 6 =$
$49 - 28 + 6 =$
$21 + 6 =$
$27 =$

6. Solve the equation.

$5n + 30 = 50$

$n =$ _____

Answer: 4

$5n + 30 = 50$
$5n + 30 - 30 = 50 - 30$
$5n = 20$
$\frac{5n}{5} = \frac{20}{5}$
$n = 4$

Check
$5n + 30 = 50$
$5(4) + 30 = 50$
$20 + 30 = 50$
$50 = 50$ Good

7. Solve the equation.

$55 + 5y - 25 = 14y - 12 - 2y$

$y =$ _____

Answer: 6

$55 + 5y - 25 = 14y - 12 - 2y$
$5y + 30 = 12y - 12$
$5y + 30 - 30 = 12y - 12 - 30$
$5y = 12y - 42$
$5y - 12y = 12y - 42 - 12y$
$-7y = -42$
$\frac{-7y}{-7} = \frac{-42}{-7}$
$y = 6$

8. Find $\frac{1}{4}$ of 136.

$\frac{1}{4}$ of 136 is _____. (Simplify your answer. Type a whole number, fraction, or mixed number.)

Answer: 34

$\frac{1}{4} \cdot \frac{136}{1} =$
$\frac{1}{2 \cdot 2} \cdot \frac{2 \cdot 2 \cdot 2 \cdot 17}{1} = \frac{2 \cdot 17}{1} = \frac{34}{1} = 34$

Primes 2, 3, 5, 7, 11, 13, 17, 19...
2 | 136
2 | 68
2 | 34
17 | 17
1

9. Find $\frac{5}{6}$ of 18. Write the answer in simplest form.

$\frac{5}{6}$ of 18 is _____. (Simplify your answer.)

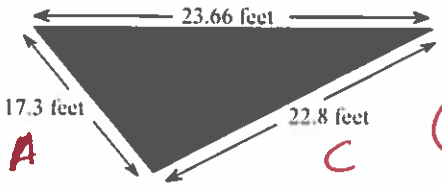
Answer: 15

$\frac{5}{6} \cdot \frac{18}{1}$
$\frac{5}{2 \cdot 3} \cdot \frac{2 \cdot 3 \cdot 3}{1} =$
$\frac{5 \cdot 3}{1} = \frac{15}{1} = 15$

Primes 2, 3, 5, 7, 11, 13, 17, 19...
2 | 18
3 | 9
3 | 3
1

2 | 6
3 | 3
1

10. A landscape architect is planning a border for a flower garden shaped like a triangle. The sides of the garden measure 17.3 feet, 23.66 feet, and 22.8 feet. Find the amount of border material needed.



P = A + B + C
P = 17.3 + 23.66 + 22.8
P = 63.76

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

Answer: 63.76

17.30
23.66
+22.80
63.76

11. 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

.25 .10 .05
x 4 x 4 x 2
1.00 .40 .10

1.00
.40
+ .10
1.50

The total value of the group is $_____.

Answer: 1.50

12. Multiply.

(−8.3)(7.94)

(−8.3)(7.94) = _____ (Type an integer or a decimal.)

Answer: −65.902

8.3
x 7.94
332
1743
581
65.902

(−8.3)(7.94) =
−65.902 =
negative times positive = negative

13. Multiply.

(−6.79)(−8.2)

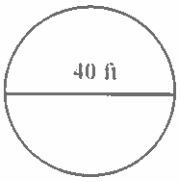
(−6.79)(−8.2) = _____ (Type an integer or a decimal.)

Answer: 55.678

6.79
x 8.2
1358
5432
55.678

(−6.79)(−8.2) =
55.678 =
negative times negative = positive

14. Find the circumference of the circle in terms of π. Then use the approximation 3.14 for π and approximate the circumference.



D = 40

$C = \pi D$
$C = \pi(40)$
$C = 40\pi$
$C = 3.14D$
$C = 3.14(40)$
$C = 125.60$

a. Find the circumference of the circle in terms of π.

The exact circumference is _____ ft.

b. Find the circumference of the circle using 3.14 as an approximation for π.

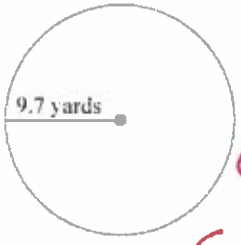
The approximate circumference is _____ ft. (Round to the nearest hundredth as needed.)

3.14
× 40
000
1256
125.60

Answers 40π

125.60

15. Find the circumference of the circle in terms of π. Then use the approximation 3.14 for π and approximate the circumference.



$C = 2\pi r$
$C = 2\pi(9.7)$
$C = 19.4\pi$
$C = 2(3.14)(9.7)$
$C = 2(30.458)$
$C = 60.916$

a. Find the circumference of the circle in terms of π.

The exact circumference is _____ yd.

b. Find the circumference of the circle using 3.14 as an approximation for π.

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

Answers 19.4π

60.916

16. A 1-ounce serving of cream cheese contains 9.1 grams of saturated fat. How much saturated fat is in 6 ounces of cream cheese?

_____ g

$\frac{1}{9.1} = \frac{6}{N}$

$1(N) = 9.1(6)$

$N = 54.6$

9.1
× 6
54.6

Answer: 54.6

17. The diameter of a ferris wheel is 300 feet. Find its circumference. Give an exact answer and an approximation using 3.14 for π.

The circumference is [ ] feet.
(Type an exact answer in terms of π.)

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

Answers 300π

942.00

$D = 3w$ $C = \pi D$ $C = \pi(300)$ $C = 300\pi$ $C = 3.14D$ $C = 3.14(300)$ $C = 942.00$

3.14 × 300 = 942.00

18. Solve the following equation.

$3.3x = -17.16$

$x =$ [ ] (Type an integer or a decimal.)

Answer: -5.2

$\frac{3.3x}{3.3} = \frac{-17.16}{3.3}$ $x = -5.2$ $3.3\overline{)17.16}$ $-(165)$ 66 $-(66)$ 0 rem

19. Solve the following equation.

$3.4y + 9.1 = 5.4y - 4.4$

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

Answer: 6.75

$3.4y + 9.1 - 9.1 = 5.4y - 4.4 - 9.1$ $3.4y = 5.4y - 13.5$ $3.4y - 5.4y = 5.4y - 13.5 - 5.4y$ $-2y = -13.5$ $\frac{-2y}{-2} = \frac{-13.5}{-2}$ $y = 6.75$

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

14, 20, 18, 12, 21 → 12, 14, 18, 20, 21 Median = 18

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 17

18

B. There is no mode.

$\frac{12+14+18+20+21}{5} = \frac{85}{5} = 17 = \text{Mean}$

There is no mode

21. Solve the proportion.

$\frac{4}{9} = \frac{x}{18}$

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

Answer: 8

$\frac{4}{9} = \frac{x}{18}$

$4(18) = 9(x)$

$72 = 9x$

$\frac{72}{9} = \frac{9x}{9}$

$8 = x$

22. What is the sales tax on a jacket priced at $475 if the sales tax rate is 6%?

The sales tax is $[ ].

Answer: 28.50

$6\% = .06$

$A = PT$

$A = (475)(.06)$

$A = \$28.50$

475
× .06
28.50
28.50

23. A stereo normally priced at $309 is on sale for 30% off. Find the discount and the sale price.

The discount is $[ ].

The sale price is $[ ].

Answers 92.70

216.30

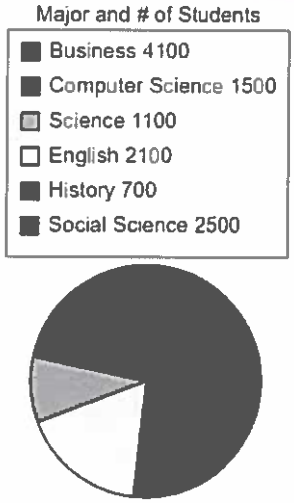
$A = P - PD$

$A = \$309 - 309(.30)$

$A = \$309 - \$92.70$ discount

$A = 216.30$ sale price

24. The circle graph shows the number of students at Rockford College who are enrolled in various majors. Find the ratio of Science majors to Business majors.



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

Answer: $\frac{11}{41}$

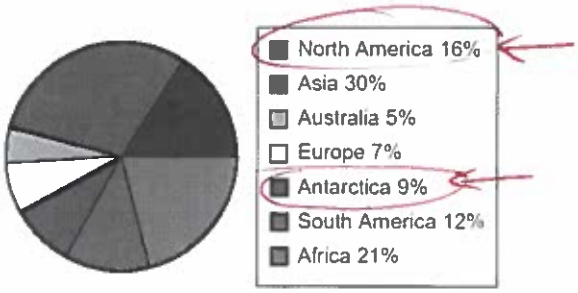
$\frac{\text{Science}}{\text{Business}} =$

$\frac{1100}{4100} =$

$\frac{100(11)}{100(41)} =$

$\frac{11}{41}$

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



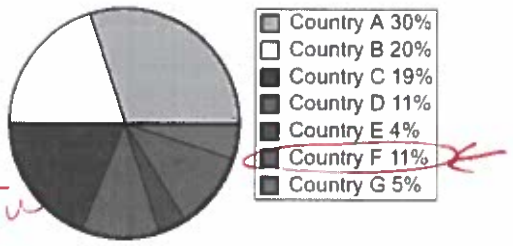
What percent of the land on Earth is accounted for by Antarctica and North America together?

16 %
+ 9 %
25 %

[ ]%

Answer: 25

26. The total amount of land of some particular countries is approximately 73,000,000 square miles. Use the graph to find the area of the Country F.



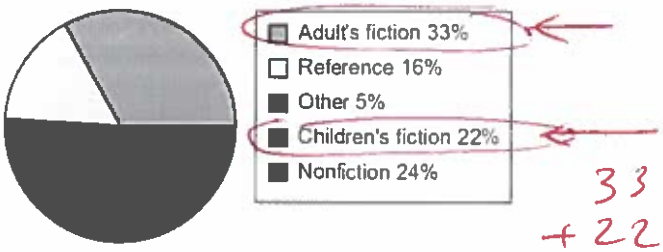
73,000,000
× .11
1 73000 000
73000000
8,030,000.00

The area of the Country F is approximately [ ] square miles.

8,030,00

Answer: 8,030,000

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



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

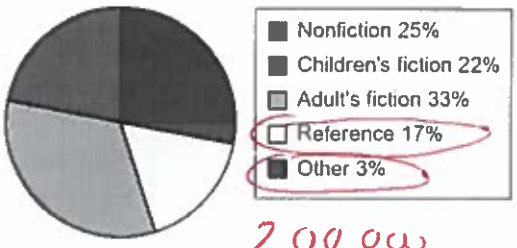
33 %
+ 22 %
55 %

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

Answer: 55

28. If this library has 200,000 books, find how many books are in the category of reference or other?

17 %
+ 3 %
20 %

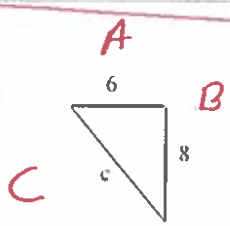


200,000
× .20
4000 00
400000
40,000.00

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

Answer: 40,000

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

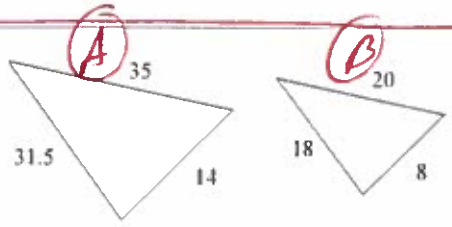


$A^2+B^2=C^2$
$(6)^2+(8)^2=C^2$
$36+64=C^2$
$100=C^2$
$\sqrt{100}=\sqrt{C^2}$
$10=C$

The length of the third side is ____.

Answer: 10

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

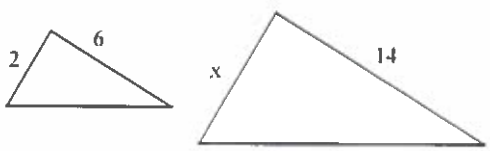


$\frac{A}{B}=$
$\frac{35}{20}=$
$\frac{5(7)}{5(4)}=$
$\frac{7}{4}$

The ratio of the corresponding sides of the first triangle to the second triangle is ____.
(Type the ratio as a simplified fraction.)

Answer: $\frac{7}{4}$

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



$\frac{2}{6} = \frac{x}{14}$

$2(14) = 6(x)$ cross mult

$28 = 6x$

$\frac{28}{6} = \frac{6x}{6}$

$= x$

round

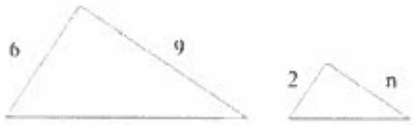
4.66
6|28.00
−(24)
40
−(36)
40
(36)
4

x = _____ (Simplify your answer. Round to the nearest tenth as needed.)

Answer: 4.7

4.7

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



$\frac{6}{9} = \frac{2}{N}$

$6(N) = 9(2)$

$6N = 18$

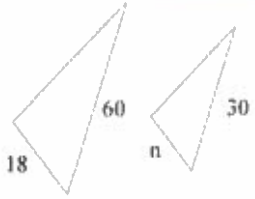
$\frac{6N}{6} = \frac{18}{6}$

$N = 3$

n = _____

Answer: 3

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



$\frac{18}{60} = \frac{n}{30}$

$18(34) = 60N$

$540 = 60N$

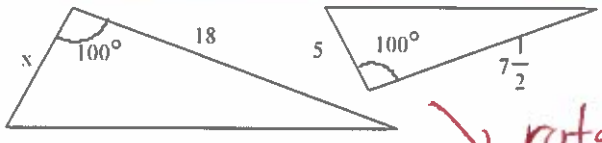
$\frac{540}{60} = \frac{60N}{60}$

$9 = N$

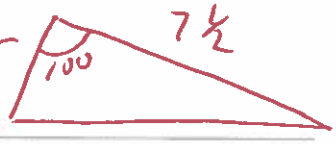
n = _____

Answer: 9

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



rotate



The unknown length is _____ unit(s).

$\frac{x}{18} = \frac{5}{7\frac{1}{2}}$

$\frac{x}{18} = \frac{5}{7.5}$

$x(7.5) = 18(5)$

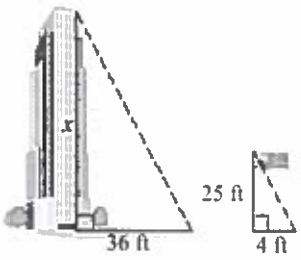
$7.5x = 90$

$\frac{7.5x}{7.5} = \frac{90}{7.5}$

$x = 12$

Answer: 12

35. 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.



$\frac{x}{36} = \frac{25}{4}$ cross mult

$x(4) = 36(25)$

$4x = 900$

$\frac{4x}{4} = \frac{900}{4}$

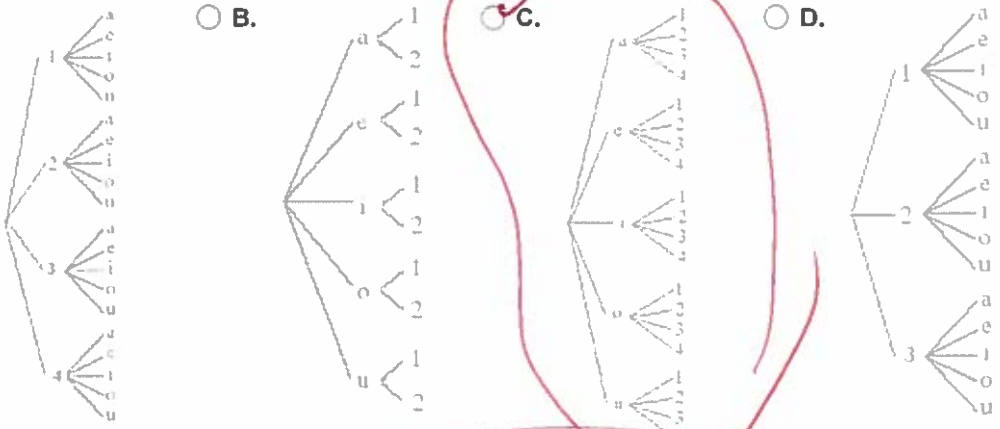
$x = 225$

The height of the building is _____ feet.

Answer: 225

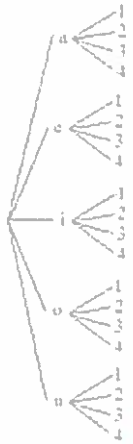
36. Draw a tree diagram for choosing a vowel, (a, e, i, o, u) and then a number (1, 2, 3 or 4). Use the diagram to find the number of possible outcomes.

○ A. ○ B. ● C. ○ D.



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

Answers



C.

20

(5)(4) = 20

37.

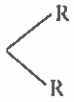
Draw a tree diagram for spinning Spinner B 1 time. Use the diagram to find the number of possible outcomes.

Spinner B

Choose the correct tree diagram below.

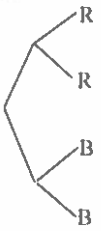
A.

B.



C.

D.

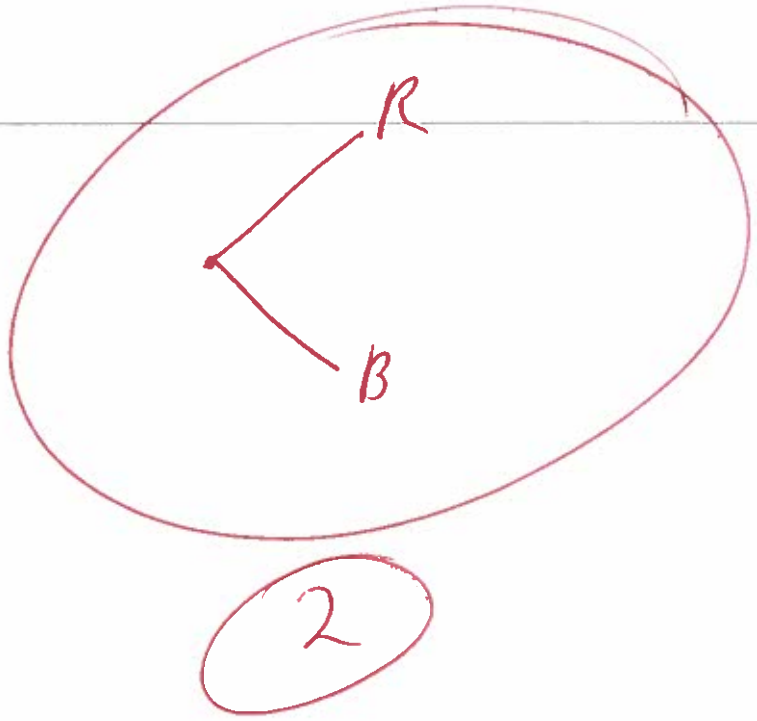


Based on the tree, what is the number of possible outcomes?

Answers

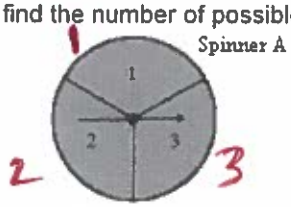
A.

2



38.

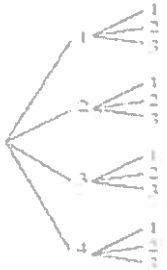
Draw a tree diagram for spinning Spinner A two times. Use the diagram to find the number of possible outcomes.



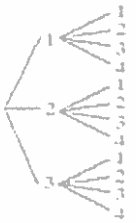
Based on the tree, what is the number of possible outcomes?

Choose the correct tree diagram below.

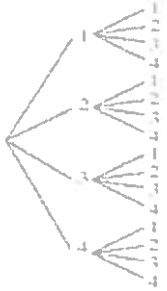
○ A.



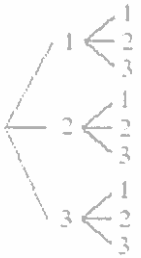
○ B.



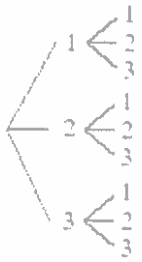
○ C.



○ D.



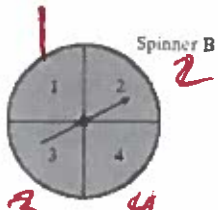
Answers



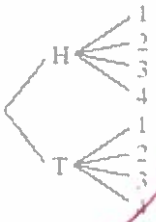
D.

9

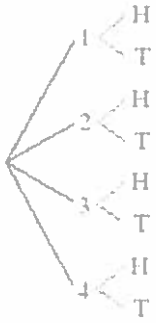
39. Draw a tree diagram for tossing a coin one time and spinning Spinner B one time. Use the diagram to find the number of possible outcomes.



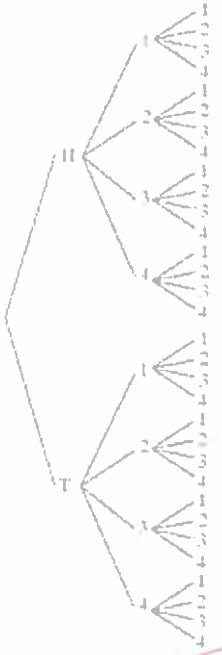
○ A.



○ B.



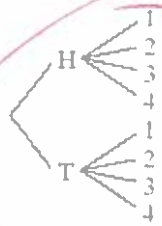
○ C.



○ D.

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

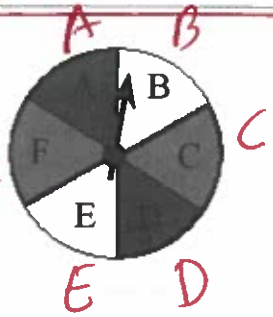
Answers



A.

8

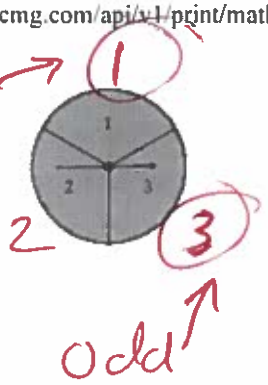
40. Suppose that the spinner shown is spun once. Find the probability of the event that the result of a spin is A, B, C, D, E, or F.



The probability is _____.
(Simplify your answer.)

Answer: 1

41. Suppose the spinner shown is spun once. Find the probability of spinning an odd number.



odd → 1, 3 ← odd

$\frac{2}{3}$ =

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

Answer: $\frac{2}{3}$

42. A marble is selected at random from a jar containing 5 red marbles, 4 yellow marbles, and 3 green marbles.

What is the probability that the marble is red?

$\frac{\text{red}}{\text{red + Yellow + green}} =$

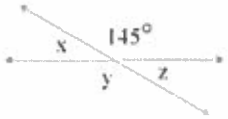
$\frac{5}{5+4+3} =$

$\frac{5}{12}$

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

Answer: $\frac{5}{12}$

43. 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 35

145

35

$x + 145 = 180$

$x + 145 - 145 = 180 - 145$

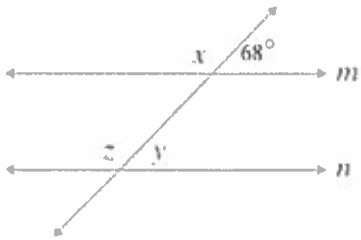
$x = 35$

$x = z$

$35 = z$

$y = 145$

44. Find the measures of angles x, y, and z in the figure. m||n.



∠x = ____°

∠z = ____°

∠y = ____°

Answers 112

112

68

$X+68=180$

$X+68-68=180-68$

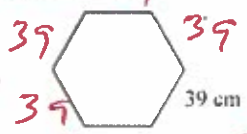
$X=112$

$y=68$

$X=Z$

$112=Z$

45. Find the perimeter of the regular polygon shown to the right.



Perimeter = ____ (1) ____

(1) ○ sq cm
○ cm

Answers 234

(1) cm

$P=6,s1$

$P=6(39)$

$P=234$

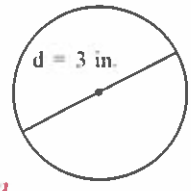
$s=39$

39

$\times\ 6$

234

46. 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 π to approximate the area.



$r = \frac{1}{2}D$ $r = \frac{3}{2}$

$r = \frac{1}{2}(3)$ $r = 1.5$

The exact area of the circle is _____ (1) _____
(Simplify your answer. Type an exact answer in terms of π.)

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

$A = \pi r^2$

$A = \pi(1.5)^2$

$A = \pi(1.5)(1.5)$

$A = \pi(2.25)$

$A = 2.25\pi$

(1) ○ cu in. ○ sq in. ○ in.

(2) ○ cu in. ○ sq in. ○ in.

$A = 3.14r^2$

$A = 3.14(1.5)^2$

$A = 3.14(1.5)(1.5)$

$A = 3.14(2.25)$

$A = 7.065$

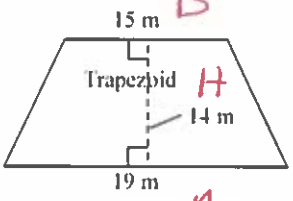
Answers 2.25π

(1) sq in.

7.065

(2) sq in.

47. Find the area of the given geometric figure.



B

A

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

$A = \frac{1}{2}(A+B)H$

$A = \frac{1}{2}(19+15)(14)$

$A = \frac{1}{2}(34)(14)$

$A = \frac{1}{2}(476)$

$A = \frac{476}{2}$

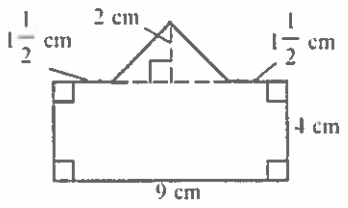
$A = 238$

(1) ○ sq m. ○ cu m. ○ m.

Answers 238

(1) sq m.

48. Find the area of the geometric figure.



$9-(1\frac{1}{2}+1\frac{1}{2})$

$9-(1.5+1.5)$

$9-(3)$

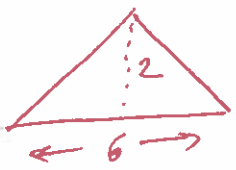
$9-3=6$ triangle base

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

(1) ○ centimeters
○ square centimeters
○ cubic centimeters

Answers 42

(1) square centimeters



triangle area

$A=\frac{1}{2}BH$

$A=\frac{1}{2}(6)(2)$

$A=\frac{1}{2}(12)$

$A=\frac{12}{2}$

$A=6$

rectangle area

$A=LW$

$A=(9)(4)$

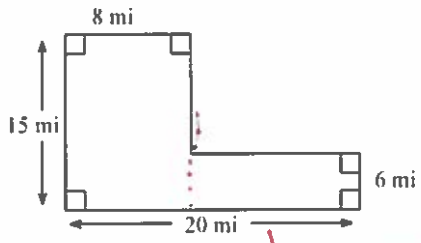
$A=36$

36 rectangle

+ 6 Triangle

42

49. Find the area of the given geometric figure.



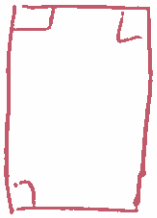
The area of the figure is _____ (1) _____
(Simplify your answer.)

(1) ○ mi.
○ cu mi.
○ sq mi.

Answers 192

(1) sq mi.

1st rectangle



W 8

$A=LW$

$A=(15)(8)$

$A=120$

$20-8$

12 L

2nd rectangle

$A=LW$

$A=(12)(6)$

$A=72$

120

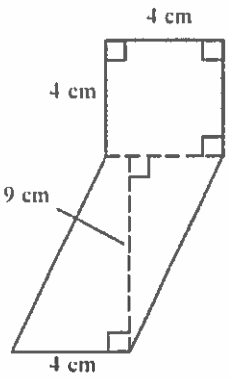
+72

Total Area

192

50.

Find the area of the geometric figure.

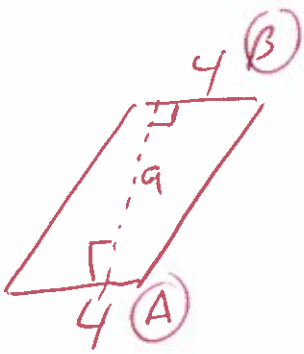


The area is [ ] (1) [ ].
(Simplify your answer.)

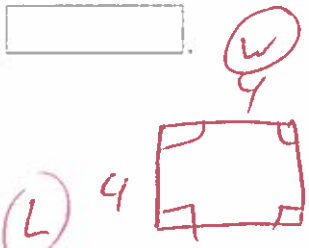
(1) ○ centimeters
○ square centimeters
○ cubic centimeters

Answers 52

(1) square centimeters



$A = \frac{1}{2}(A+B)H$
$A = \frac{1}{2}(4+4)(9)$
$A = \frac{1}{2}(8)(9)$
$A = \frac{1}{2}(72)$
$A = \frac{72}{2}$
$A = 36$

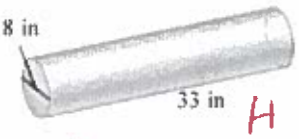


$A = LW$
$A = (4)(4)$
$A = 16$

Total area
36
+16
52

51.

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



$D = 8$, $r = \frac{1}{2}D$, $r = \frac{1}{2}(8)$
$r = \frac{8}{2}$
$r = 4$

The exact volume is [ ] (1) [ ].
(Simplify your answer. Type an exact answer in terms of π.)

The approximate volume is [ ] (2) [ ].
(Simplify your answer. Type an integer, fraction, or mixed number.)

(1) ○ inches
○ square inches
○ cubic inches

(2) ○ inches
○ square inches
○ cubic inches

Answers 528π

(1) cubic inches

$1659\frac{3}{7}$

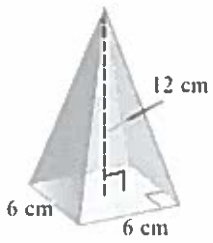
(2) cubic inches

$V = \pi r^2 H$
$V = \pi(4)^2(33)$
$V = \pi(4)(4)(33)$
$V = \pi(16)(33)$
$V = \pi(528)$
$V = 528\pi$

$V = \frac{22}{7}r^2H$
$V = \frac{22}{7}(4)^2(33)$
$V = \frac{22}{7}(4)(4)(33)$
$V = \frac{22}{7}(16)(33)$
$V = \frac{22}{7}\frac{(528)}{1}$
$V = \frac{11616}{7}$
$V = 1659\frac{3}{7}$

$7\overline{)11616}$ → $1659\ \frac{3}{7}$
(7)
46
−(42)
41
−(35)
66
−(63)
3 rem

52. Find the volume of the solid.



$s = 6$

$h = 12$

$V = \frac{1}{3}s^2h$

$V = \frac{1}{3}(6)^2(12)$

$V = \frac{1}{3}(6)(6)(12)$

$V = \frac{1}{3}(36)(12)$

$V = \frac{1}{3}\left(\frac{432}{1}\right)$

$V = \frac{432}{3}$

$V = 144$

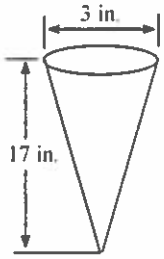
The volume is _____ (1) _____. (Simplify your answer.)

(1) ○ centimeters
○ square centimeters
○ cubic centimeters

Answers 144

(1) cubic centimeters

53. Find the exact volume of a waffle ice cream cone with a 3-in. diameter and a height of 17 inches.



$D = 3$

$r = \frac{1}{2}D$

$r = \frac{1}{2}(3)$

$r = \frac{3}{2}$

$r = 1.5$ $h = 17$

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

(1) ○ sq in.
○ in.
○ cu in.

Answers 12.75π

(1) cu in.

$V = \frac{1}{3}\pi r^2 h$

$V = \frac{1}{3}\pi(1.5)^2(17)$

$V = \frac{1}{3}\pi(1.5)(1.5)(17)$

$V = \frac{1}{3}\pi(2.25)(17)$

$V = \frac{1}{3}\pi(38.25)$

$V = \frac{38.25\pi}{3}$

$V = 12.75\pi$

54. A computer has shape of a rectangular solid. Find the volume of the computer, with dimensions of 3 inches by 3 inches by 3.1 inches.

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

(1) ○ sq in.
○ in.
○ cu in.

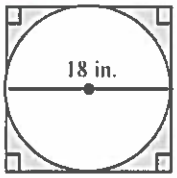
$V = LWH$
$V = (3)(3)(3.1)$
$V = 9(3.1)$
$V = 27.9$

Answers 27.9

(1) cu in.

Circle Area Area SQ-M

55. Find the area of the shaded region. Use the approximation 3.14 for π.



$D = 18$
$r = \frac{1}{2}D$
$r = \frac{1}{2}(18)$
$r = \frac{18}{2}$
$r = 9$

$A = \pi r^2$
$A = 3.14(\pi)$
$A = 3.14(9)(9)$
$A = 3.14(81)$
$A = 254.34$

$A = LW$
$A = (18)(18)$
$A = 324$

$L = 18$

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

(1) ○ cu in.
○ sq in.
○ in.

$324.00 - 254.34 = 69.66$

Answers 69.66

(1) sq in.

---

56. Solve the equation.

$-2y + 2 = -2(2y + 6)$

$-2y + 2 = -2(2y + 6)$

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.

$-2y + 2 = -4y - 12$
$-2y + 2 - 2 = -4y - 12 - 2$
$-2y = -4y - 14$
$-2y + 4y = -4y - 14 + 4y$
$2y = -14$
$\frac{2y}{2} = \frac{-14}{2}$
$y = -7$

Answer: A. y = −7 (Type an integer or a simplified fraction.)

57. Solve the equation.

$16x - 7 = 3 + 14x$

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 = 5

$16x - 7 = 3 + 14x$
$16x - 7 + 7 = 3 + 14x + 7$
$16x = 14x + 10$
$16x - 14x = 14x + 10 - 14x$
$2x = 10$
$\frac{2x}{2} = \frac{10}{2}$
$x = 5$

58. Solve the equation.

$-3(5x - 6) = 3x$

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 = 1 (Simplify your answer.)

$-3(5x - 6) = 3x$
$-15x + 18 = 3x$
$-15x + 18 - 18 = 3x - 18$
$-15x = 3x - 18$
$-15x - 3x = 3x - 18 - 3x$
$-18x = -18$
$\frac{-18x}{-18} = \frac{-18}{-18}$
$x = 1$

59. Solve the equation for x.

$6(x + 8) - 8 = 40$

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 = 0 (Simplify your answer. Type an integer or a fraction.)

$6(x + 8) - 8 = 40$
$6x + 48 - 8 = 40$
$6x + 40 = 40$
$6x + 40 - 40 = 40 - 40$
$6x = 0$
$\frac{6x}{6} = \frac{0}{6}$
$x = 0$

60. Solve the equation.

$10 - 2(a - 1) = 9 + a$

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 = 1 (Simplify your answer. Type an integer or a fraction.)

$10 - 2(a - 1) = 9 + a$
$10 - 2a + 2 = 9 + a$
$-2a + 12 = 9 + a$
$-2a + 12 - 12 = 9 + a - 12$
$-2a = a - 3$
$-2a - 1a = 1a - 3 - 1a$
$-3a = -3$
$\frac{-3a}{-3} = \frac{-3}{-3}$
$a = 1$

61. Solve the equation.

$-2y - 19 = 6y + 13$

$-2y - 19 = 6y + 13$

$-2y - 19 + 19 = 6y + 13 + 19$

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

$-2y = 6y + 32$

$-2y - 6y = 6y + 32 - 6y$

$-8y = 32$

$\frac{-8y}{-8} = \frac{32}{-8}$ → $y = -4$

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

Answer: A. y = −4 (Type an integer or a simplified fraction.)

62. Solve the equation.

$\frac{3}{2}x + \frac{5}{2} = -\frac{7}{2}$

$\frac{3x}{2}(2) + \frac{5}{2}(2) = -\frac{7}{2}(2)$ Mult by LCD

$3x(1) + 5(1) = -7(1)$

$3x + 5 = -7$

$3x + 5 - 5 = -7 - 5$

$3x = -12$

$\frac{3x}{3} = \frac{-12}{3}$ → $x = -4$

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 = −4

63. Solve the equation for x.

$\frac{2}{9}x - \frac{1}{3} = 1$

$\frac{2x}{9}(9) - \frac{1}{3}(9) = \frac{1}{1}(9)$ Mult by LCD

$2x(1) - 1(3) = 1(9)$

$2x - 3 = 9$

$2x - 3 + 3 = 9 + 3$

$2x = 12$

$\frac{2x}{2} = \frac{12}{2}$

$x = 6$

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 = 6 (Simplify your answer. Type an integer or a fraction.)

64. Solve.

$0.9x - 6.9 = 0.3$

$0.9x - 6.9 = 0.3$
$0.9x - 6.9 + 6.9 = 0.3 + 6.9$
$0.9x = 7.2$

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

$\frac{0.9x}{0.9} = \frac{7.2}{0.9}$

$x = 8$

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

Answer: A. $x =$ 8 (Simplify your answer.)

65. Solve the equation.

$9x - 25 = 8x - 25$

$9x - 25 = 8x - 25$
$9x - 25 + 25 = 8x - 25 + 25$
$9x = 8x$
$9x - 8x = 8x - 8x$
$1x = 0$
$x = 0$

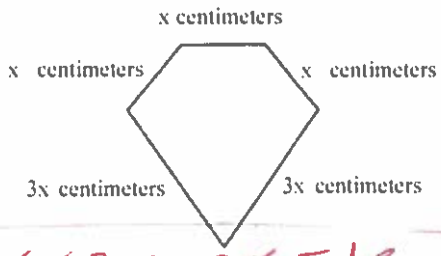
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

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

Answer: A. $x =$ 0

66. 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 18 centimeters.

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



$x + x + x + 3x + 3x = 18$

$1x + 1x + 1x + 3x + 3x = 18$

$9x = 18$

$\frac{9x}{9} = \frac{18}{9}$

$x = 2$

a. Choose the correct answer below.

- ○ **A.** $x + x + x + 3x + 3x = 9$
- ○ **B.** $x + x + x + x + x = 18$
- ○ **C.** $9x^5 = 18$
- ✓ **D.** $x + x + x + 3x + 3x = 18$

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. ○ cm^2.

(2) ○ cm. ○ cm^2.

Short side $= x = 2$

Long side $= 3x = 3(2) = 6$

Answers D. $x + x + x + 3x + 3x = 18$

2

2

(1) cm.

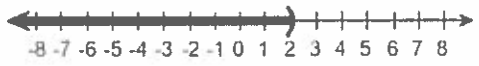
6

(2) cm.

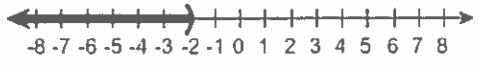
67. Solve the inequality. Graph the solution set and write it in interval notation.

$2x < -4$

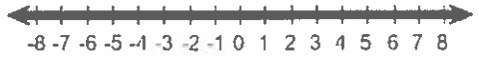
Choose the correct graph below.

○ A. 

○ B. 

○ C. 

○ D. 

○ E. 

○ F. 

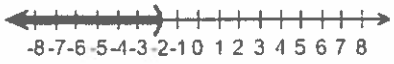
The solution to the inequality $2x < -4$ is [ ].
(Type your answer in interval notation.)

$2x < -4$

$\frac{2x}{2} < \frac{-4}{2}$

$x < -2$ $(-\infty, -2)$

Answers



C.

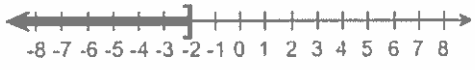
$(-\infty, -2)$

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

$-8x \leq 16$

Choose the correct graph below.

○ A. 

○ B. 

○ C. 

○ D. 

○ E. 

○ F. 

The solution to the inequality $-8x \leq 16$ is [ ].
(Type your answer in interval notation.)

$-8x \leq 16$

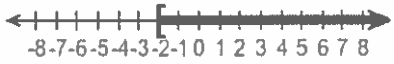
$\frac{-8x}{-8} \geq \frac{16}{-8}$

divide by a negative and turn all signs around

$x \geq -2$

$[-2, \infty)$

Answers



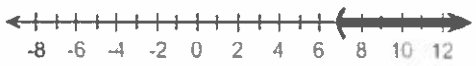
D.

$[-2, \infty)$

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

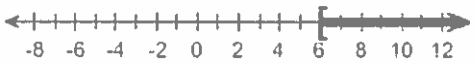
$-0.3y < -2.1$

Choose the correct graph below.

A. 

B. 

C. 

D. 

The solution set in interval notation is _____.

$-0.3y < -2.1$

$\frac{-0.3y}{-0.3} > \frac{-2.1}{-0.3}$

$y > 7$

divide by a negative turn all signs around

Answers

A. 

$(7,\infty)$

$(7,\infty)$

70. Solve the inequality.

$4x - 5 < 7x + 1$

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

$4x - 5 < 7x + 1$

$4x - 5 + 5 < 7x + 1 + 5$

$4x < 7x + 6$

$4x - 7x < 7x + 6 - 7x$

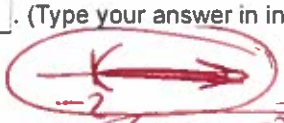
$-3x < 6$

$\frac{-3x}{-3} > \frac{6}{-3}$

$x > -2$

Turn sign around

Answer: $(-2,\infty)$



$(-2,\infty)$

71. Solve the inequality.

$-6x + 2 \geq 2(7 - x)$

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

$-6x + 2 \geq 2(7 - x)$

$-6x + 2 \geq 14 - 2x$

$-6x + 2 - 2 \geq 14 - 2x - 2$

$-6x \geq -2x + 12$

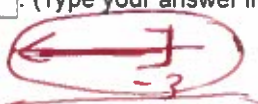
$-6x + 2x \geq -2x + 12 + 2x$

$-4x \geq 12$

$\frac{-4x}{-4} \leq \frac{12}{-4}$

$x \leq -3$

Answer: $(-\infty, -3]$



$(-\infty, -3]$

72. The perimeter of a rectangle is to be no greater than 70 centimeters and the width must be 10 centimeters. Find the maximum length of the rectangle.

The maximum length of the rectangle is _____ (1) _____.
(Type an integer.)

(1) ○ cm^3.
○ cm^2.
○ cm.

$P = 2L + 2W$

$2L + 2W = P$

$2x + 2(10) \leq 70$ rewrite

$2x + 20 \leq 70$

$2x + 20 - 20 \leq 70 - 20$

$2x \leq 50$

$\frac{2x}{2} \leq \frac{50}{2}$

$x \leq 25$

Answers 25

(1) cm.

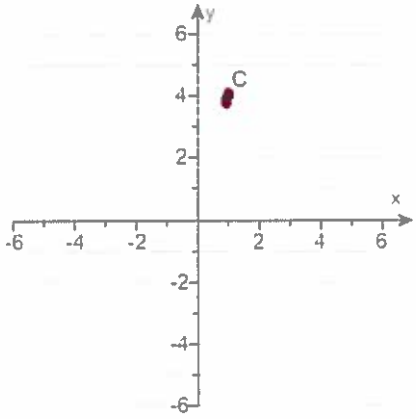
73. James and Bethany Morrison are celebrating their 10th anniversary by having a reception at a local reception hall. They have budgeted $5,000 for their reception. If the reception hall charges a $90 cleanup fee plus $32 per person, find the greatest number of people that they may invite and still stay within their budget.

James and Bethany can invite at most _____ people to the reception.
(Round down to the nearest whole person.)

$32x + 90 \leq 5000$
$32x + 90 - 90 \leq 5000 - 90$
$32x \leq 4910$ $x \leq 153.4375$
$\frac{32x}{32} \leq \frac{4910}{32}$ Round
$x \leq 153$

Answer: 153

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



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

(1, 4)
1 right, up 4

Answer: (1,4)

75.

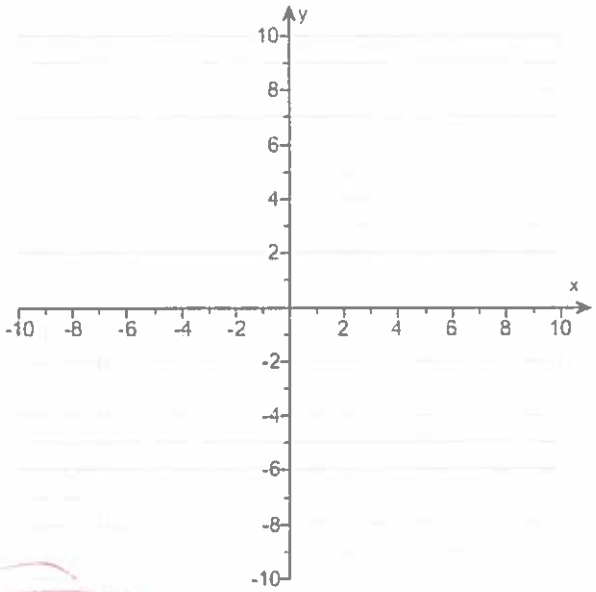
For the equation, find three ordered pair solutions by completing the table. Then use any two of the ordered pairs to graph the equation.

$$y = \frac{1}{3}x$$

Complete the table below.

x	y
0	
3	
−6	

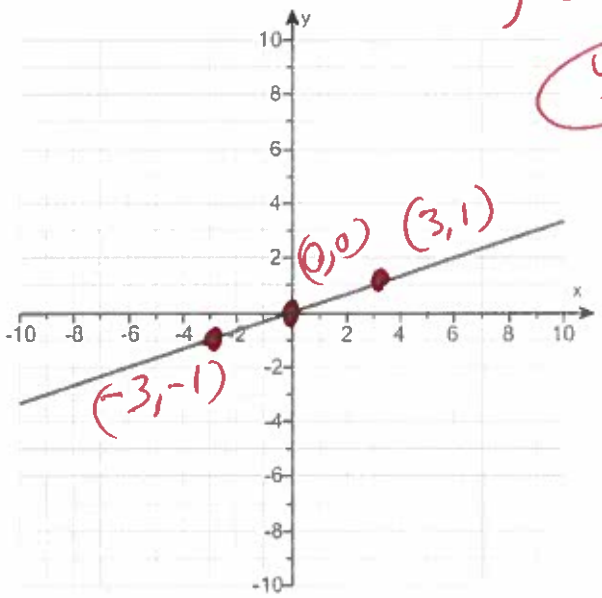
Use the graphing tool to graph the equation.



Answers 0

1

−2



$y = \frac{1}{3}x$

$y = \frac{1}{3}(-6)$

$y = \frac{-6}{3}$

$y = -2$

$y = \frac{1}{3}(0)$

$y = 0$

$y = \frac{1}{3}(3)$

$y = \frac{3}{3}$

$y = 1$

x	y
−6	−2
0	0
3	1

Points

(−6, −2)

(0, 0)

(3, 1)

76.

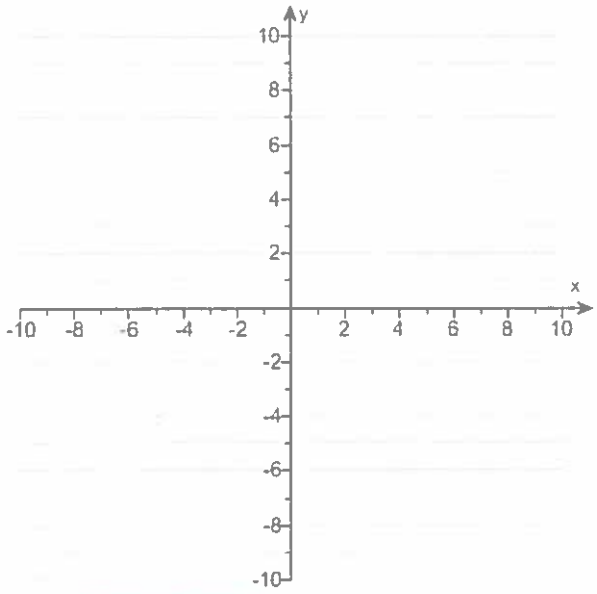
For the following equation, find three ordered pair solutions by completing the table. Then use the ordered pairs to graph the equation.

$y = -2x + 5$

Find three ordered pair solutions of the given equation.

x	y
0	
1	
2	

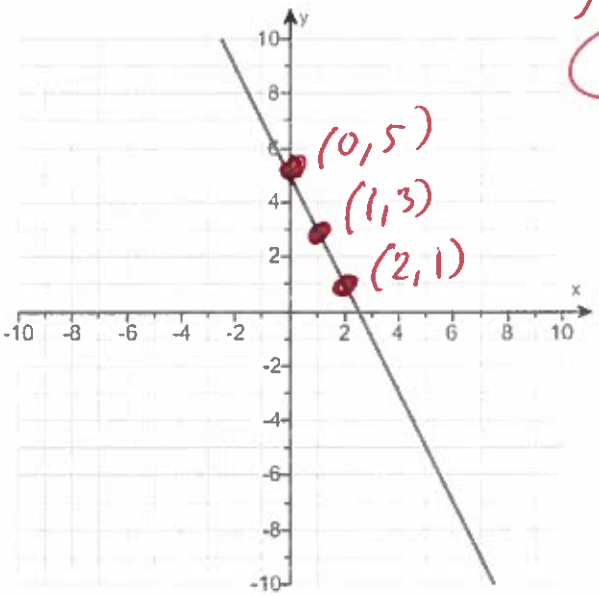
Use the graphing tool to graph the line.



Answers 5

3

1



$y = -2x + 5$

$y = -2(0) + 5$

$y = 0 + 5$

$y = 5$

$y = -2(1) + 5$

$y = -2 + 5$

$y = 3$

$y = -2(2) + 5$

$y = -4 + 5$

$y = 1$

x	y
0	5
1	3
2	1

Points

(0, 5)

(1, 3)

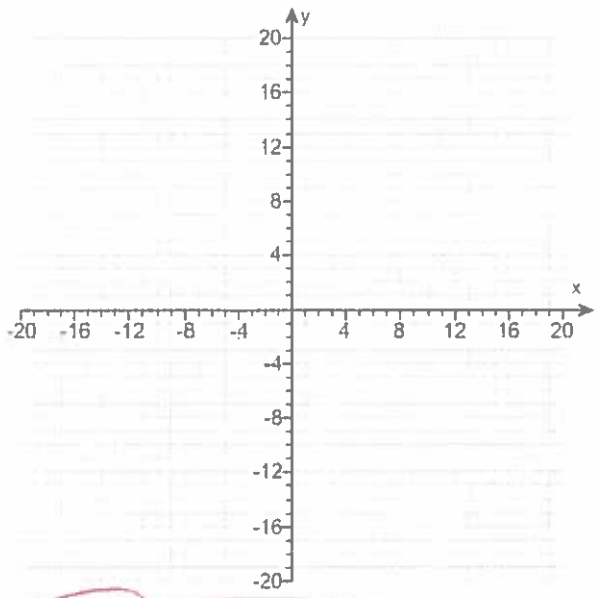
(2, 1)

77.

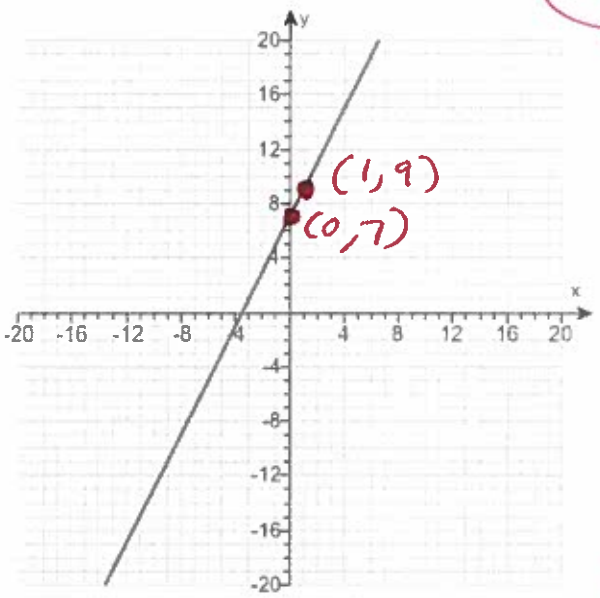
Graph the equation.

$y = 2x + 7$

Use the graphing tool to graph the line.



Answer:



$y = 2x + 7$

$y = 2(0) + 7$

$y = 0 + 7$

$y = 7$

$y = 2(1) + 7$

$y = 2 + 7$

$y = 9$

x	y
0	7
1	9

Points

(0,7)

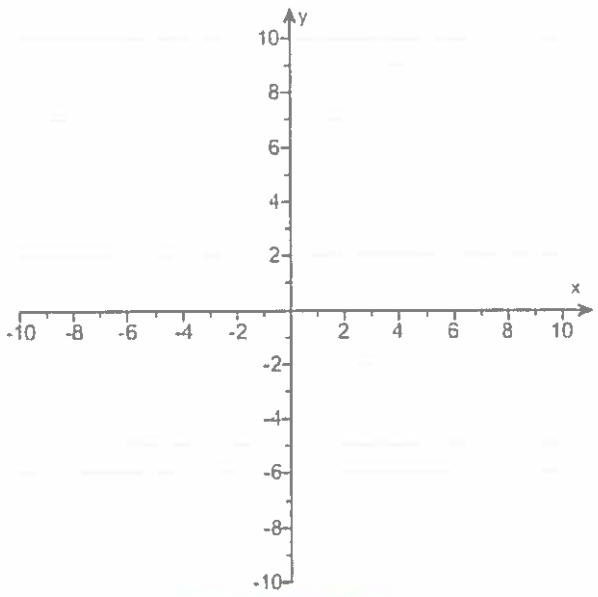
(1,9)

78.

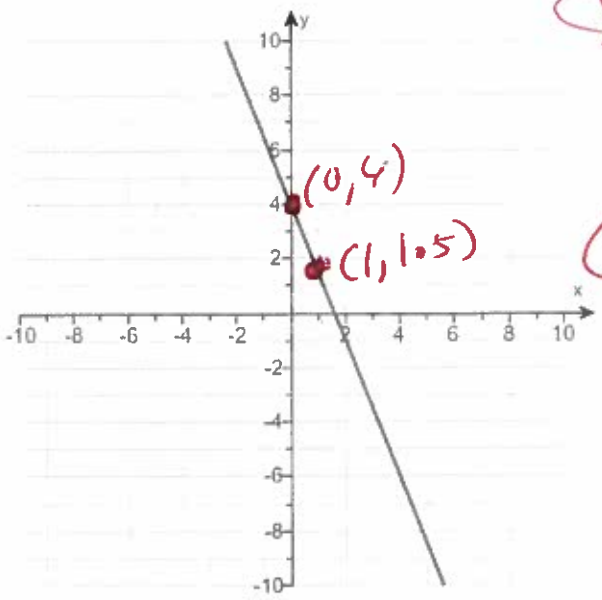
Graph the linear equation.

$y = -2.5x + 4$

Use the graphing tool to graph the equation.



Answer:



$y = -2.5x + 4$

$y = -2.5(0) + 4$

$y = 0 + 4$

$y = 4$

$y = -2.5(1) + 4$

$y = -2.5 + 4$

$y = 1.5$

x	y
0	4
1	1.5

Points

(0,4)

(1, 1.5)

79.

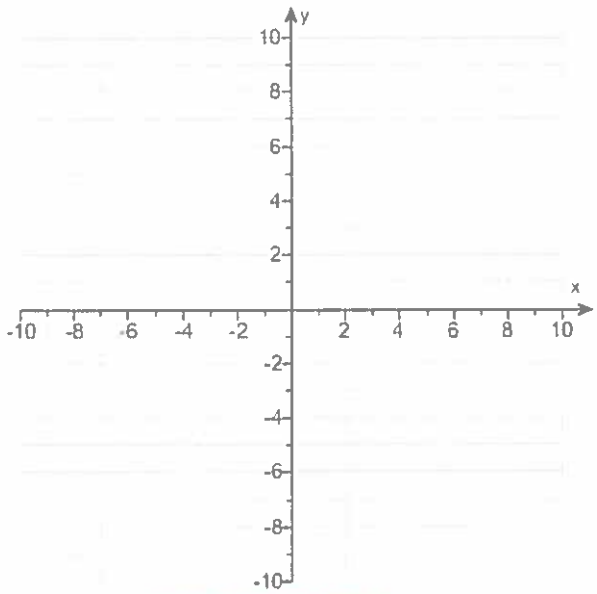
Write the statement as an equation in two variables. Then graph the equation.

The y-value is 1 more than the x-value.

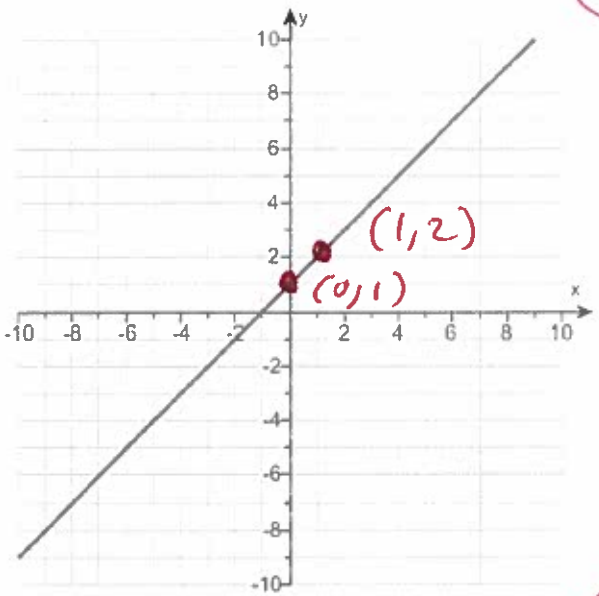
Write the statement as an equation in two variables.

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

Use the graphing tool to graph the equation.



Answers y = x + 1



$y = x + 1$

$y = (0) + 1$

$y = 0 + 1$

$y = 1$

$y = (1) + 1$

$y = 1 + 1$

$y = 2$

x	y
0	1
1	2

Points

(0, 1)

(1, 2)

80. Given the following function, find f(− 3), f(0), and f(5).

f(x) = 4x + 4

f(− 3) = ____

f(0) = ____

f(5) = ____

Answers − 8

4

24

$f(x) = 4x+4$

$f(-3) = 4(-3)+4$ $\quad f(0) = 4(0)+4$ $\quad f(5) = 4(5)+4$

$f(-3) = -12+4$ $\quad f(0) = 0+4$ $\quad f(5) = 20+4$

$f(-3) = -8$ $\quad f(0) = 4$ $\quad f(5) = 24$

81. Given the following function, find f(− 3), f(0), and f(5).

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

f(− 3) = ____

f(0) = ____

f(5) = ____

Answers 7

−2

23

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

$f(-3) = (-3)^2 - 2$ $\quad f(0) = (0)^2 - 2$ $\quad f(5) = (5)^2 - 2$

$f(-3) = (-3)(-3) - 2$ $\quad f(0) = (0)(0) - 2$ $\quad f(5) = (5)(5) - 2$

$f(-3) = 9 - 2$ $\quad f(0) = 0 - 2$ $\quad f(5) = 25 - 2$

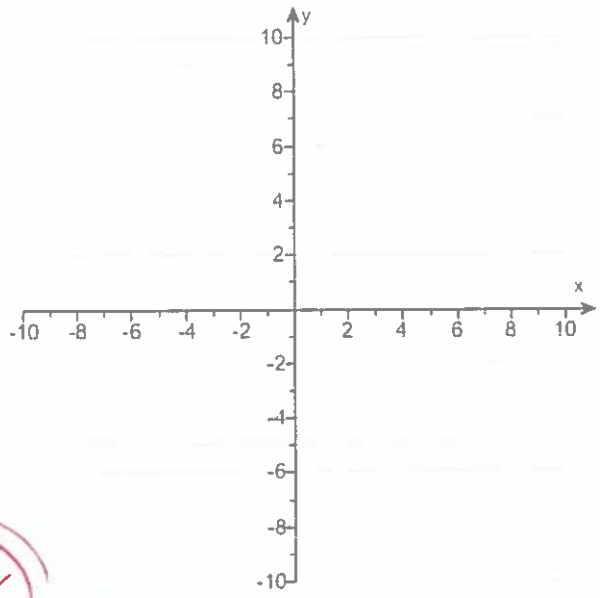
$f(-3) = 7$ $\quad f(0) = -2$ $\quad f(5) = 23$

82.

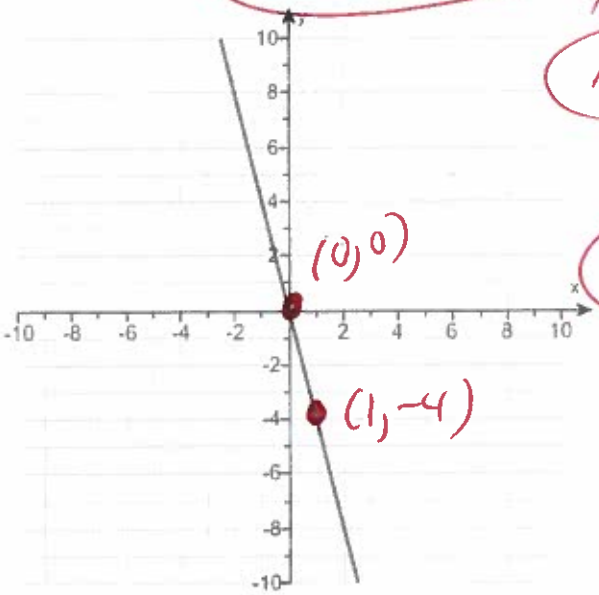
Graph the linear equation.

$f(x) = -4x$

Use the graphing tool to graph the equation.



Answer:



$f(x) = -4x$

$f(0) = -4(0)$

$f(0) = 0$

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

$f(1) = -4$

x	f(x)
0	0
1	-4

Points

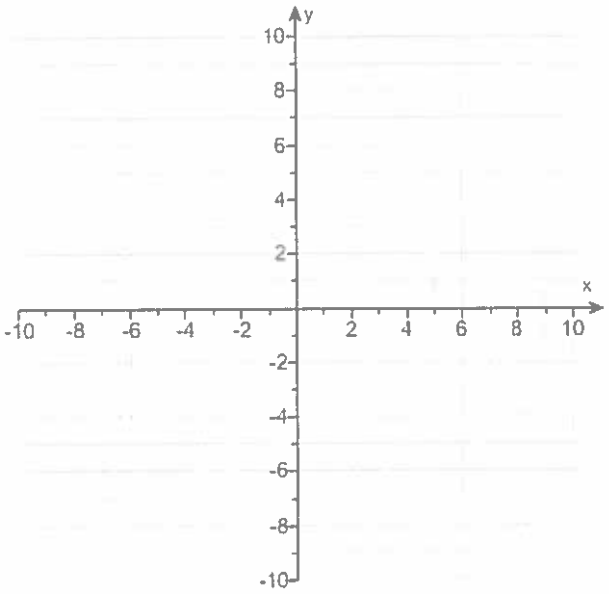
(0, 0)

(1, -4)

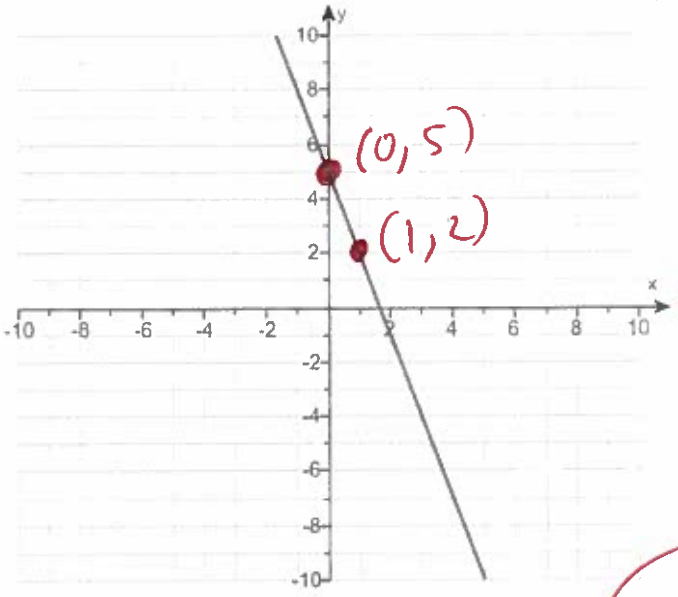
83. Graph the linear equation.

$f(x) = -3x + 5$

Use the graphing tool to graph the linear equation.



Answer:



$f(x) = -3x + 5$

x	f(x)
0	5
1	2

$f(0) = -3(0) + 5$

$f(0) = 0 + 5$

$f(0) = 5$

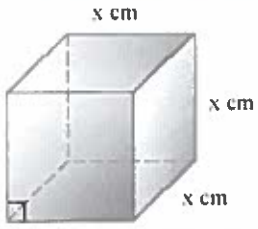
$f(1) = -3(1) + 5$

$f(1) = -3 + 5$

$f(1) = 2$

Points (0,5) (1,2)

84. 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 15 centimeters.



$V(x) = x^3$

$V(15) = (15)^3$

$V(15) = (15)(15)(15)$

$V(15) = 225(15)$

$V(15) = 3375$

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

Answer: 3375

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

y = 6 when x = 24

Find the constant of variation k.

k = [ ] (Type an integer or a fraction. Simplify your answer.)

Complete the direct variation equation given y = 6 when x = 24.

y = [ ] (Use integers or fractions for any numbers in the expression.)

Answers $\frac{1}{4}$

$\frac{1}{4}x$

$y = kx$ y varies directly as x

$6 = k(24)$

$6 = 24k$

$\frac{6}{24} = \frac{24k}{24}$

$\frac{6}{24} = k$

$\frac{6(1)}{6(4)} = k$

$\frac{1}{4} = k$

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