| Student: _____ | Instructor: Alfredo Alvarez | Assignment: |
| Date: _____ | Course: Math 0410 / 0320 Alvarez | MATH5THGRADEWARMUP105j |

1. Write the whole number in expanded form.

    6620

    6620 = [_____] (Type your answer using plus signs.)

$6(10^3) + 6(10^2) + 2(10^1) + 0(1) =$
$6(10 \cdot 10 \cdot 10) + 6(10 \cdot 10) + 2(10) + 0(1) =$
$6(1000) + 6(100) + 2(10) + 0(1) =$
$6000 + 600 + 20 + 0 =$
$\boxed{6620 =}$

    Answer: 6000 + 600 + 20

2. Find the perimeter of the figure.
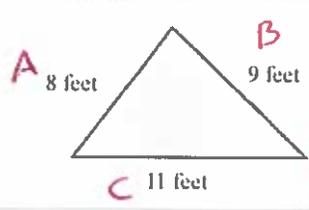
$P = A + B + C$
$P = 8 + 9 + 11$
$P = 17 + 11$
$\boxed{P = 28}$

    The perimeter is [_____] feet.

    Answer: 28

3. Find the perimeter of the figure.

    [_____] ft

$w = 2 \quad P = 2L + 2w$
$P = 2(5) + 2(2)$
$P = 10 + 4$
$L = 5 \quad \boxed{P = 14}$

    Answer: 14

4. Find the perimeter of the figure.

    [_____] cm

$P = A + B + C + D + E$
$P = 10 + 4 + 3 + 17 + 7 + 10$
$P = 14 + 3 + 17 + 7 + 10$
$P = 17 + 17 + 7 + 10$
$P = 34 + 7 + 10$
$P = 41 + 10$
$\boxed{P = 51}$
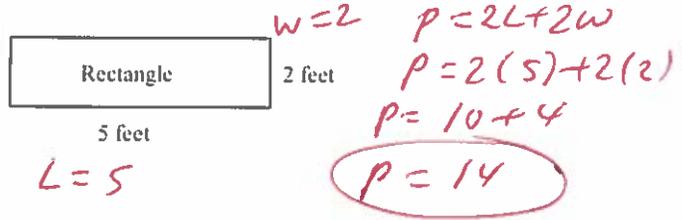
    Answer: 51
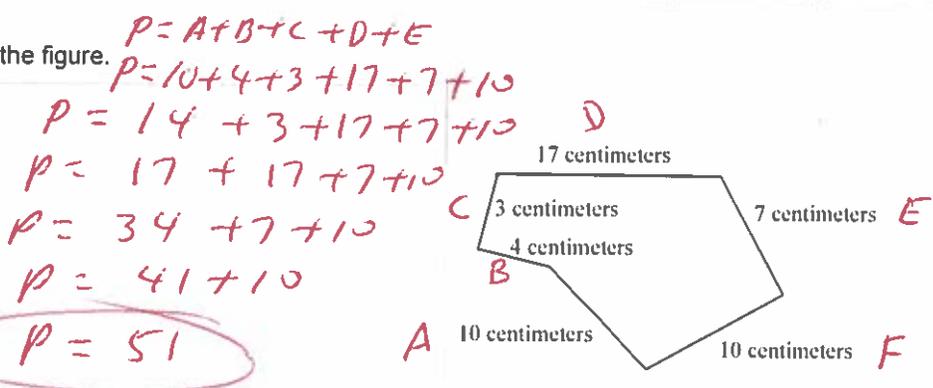
5. A new notebook computer with DVD player costs $863. Derik Muller has $1252 in his checking account. How much will be left in his checking account after he buys the notebook computer?

    Derik will have $ [_____] remaining in his checking account after he buys the notebook computer.

$\begin{array}{r} 1252 \\ - 863 \\ \hline \boxed{389} \end{array}$

    Answer: 389

6. Find the total land area drained by the C and D sub-basins.

$$189\,000$$
$$+\ 74\,000$$
$$263,000$$

River Basin

Area (in thousands of square miles)

500 530,000

246,000
189,000
162,000
74,000
50,000

A   B   C   D   E   F

[ ] sq mi

Answer: 263,000
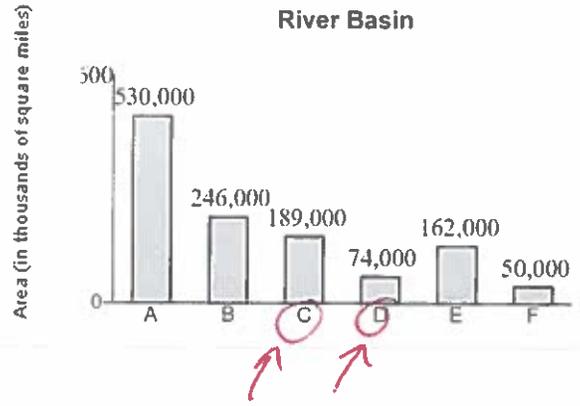
7. How many more square miles of land is drained by the A sub-basin than the B sub-basin?

$$580\,000$$
$$-2\,4\,8\,000$$
$$332\,000$$

River Basin

Area (in thousands of square miles)

500 580,000

248,000
187,000
162,000
79,000
40,000

A   B   C   D   E   F

[ ] sq mi

Answer: 332,000
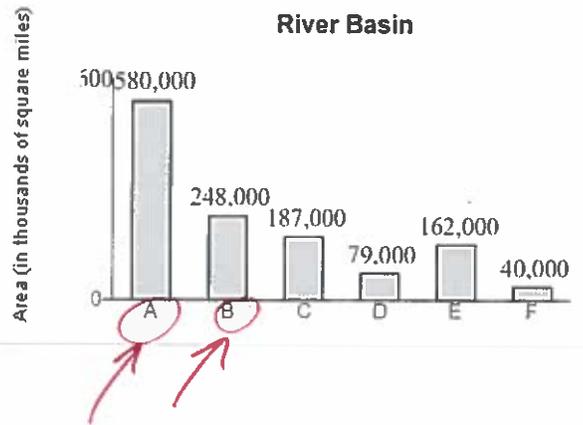
8. Alexander is installing a pen for his dog. The pen will have the shape and dimensions of the figure shown to the right. How many meters of fencing are needed to enclose the the area shown?

$$P = A + B + C + D$$
$$P = 70 + 109 + 131 + 60$$
$$P = 179 + 131 + 60$$
$$P = 310 + 60$$
$$P = 370$$

B
109 meters

70 meters   A   131 meters   C

60 meters   D

[ ] m

Answer: 370
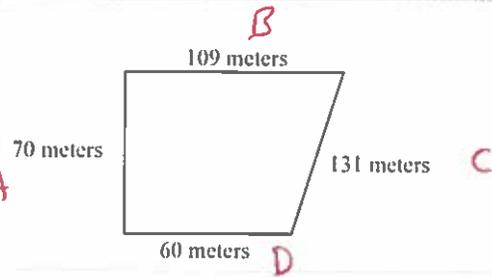
9. Evelyn Abrams is reading a 544-page book. If she has just finished reading page 455, how many more pages must she read to finish the book?

$$544$$
$$-455$$
$$89$$

[ ] pages

Answer: 89

10. A permanent game board is made of granite. It is in the shape of a square with side lengths of 45 ft. Find the perimeter of the square playing board.

The perimeter is [ ] feet.

Answer: 180

$P = 45$
$P = 4(45)$
$P = 180$

```
  45
X  4
 180
```

11.

The table on the right shows the number of a particular store in ten states. What is the total number of stores located in the three states with the most stores?

A total of [ ] stores are located in the three states with the most stores.

State	Number of Stores
Arizona	74
California	92
Florida	158
Georgia	39
Illinois	96
New York	140
Michigan	61
Minnesota	46
Ohio	63
Texas	38

```
  158
   96
+ 140
  394
```

Answer: 394

12. Round 3,656 to the nearest hundred.

The number 3,656 rounded to the nearest hundred is [ ].

Answer: 3,700

3656

3700

since
5 ≥ 5
round up

13. Round 48,443 to the nearest thousand.

48,443 rounded to the nearest thousand is [ ].

Answer: 48,000

48443

48000

since
4 < 5
do not round up

14.

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

4 meters $L = 4$

$W = 2$

2 meters

$A = L \cdot W$
$A = (4)(2)$
$A = 8$
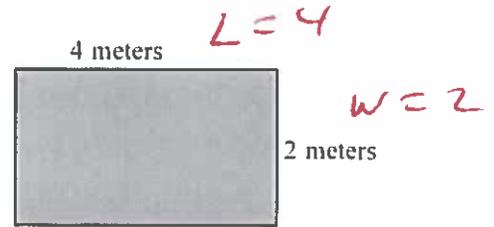
The area of the rectangle is _____ (1) _____

The perimeter of the rectangle is _____ (2) _____

$P = 2L + 2W$
$P = 2(4) + 2(2)$
$P = 8 + 4$
$P = 12$

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

Answers 8

     (1) square meters.

     12

     (2) meters.

---

15. One triple fudge brownie contains 149 calories. How many calories are in 4 triple fudge brownies?

_____ calories

$\frac{1}{149} = \frac{4}{N}$

$1(N) = 149(4)$ cross mult

$N = 596$

Answer: 596

    $\overset{1}{1}\overset{3}{4}9$
    $\times \quad 4$
    $\overline{596}$

---

16. The textbook for a course in biology costs $98. There are 34 students in the class. Find the total cost of the biology books for the class.

The total cost is $ _____ .

Answer: 3,332

$\frac{1}{98} = \frac{34}{N}$

$1(N) = 98(34)$

$N = 3,332$

   $\overset{3}{9}\overset{}{8}$
   $\overset{1}{3}4$
   $\overline{392}$
  294
  $\overline{3,332}$

17. Cabot Creamery is packing a palette of 20-lb boxes of cheddar cheese to send to a local restaurant. There are six layers of boxes on the pallet, and each layer is five boxes wide by six boxes deep.
   a. How many boxes are in one layer?
   b. How many boxes are on the pallet?
   c. What is the weight of the cheese on the pallet?

   a. There are [   ] boxes in one layer.

   b. There are [   ] boxes on the pallet.

   c. The weight of the cheese on the pallet is [   ] lb.

   $Layer = (5)(6) = 30$ boxes
   $Pallet = (30)(6) = 180$ boxes
   weight of cheese $= (180)(20) = 3600$ pounds

   Answers 30

   180

   3,600

---

18. A plot of land measures 70 feet by 170 feet. Find its area.

   The area of the rectangle is [   ] (1) [   ]

   (1) ○ feet.
       ○ cubic feet.
       ○ square feet.

   $L = 170$ $W = 70$
   $A = LW$
   $A = (170)(70)$
   $A = 11,900$

   170
   $\times \ 70$
   000
   1190
   $11,900$

   Answers 11,900

   (1) square feet.

---

19. A pixel is a rectangular dot on a graphing calculator screen. If a graphing calculator screen contains 66 pixels in a row and 92 pixels in a column, find the total number of pixels on a screen.

   The total number of pixels on a screen is [   ].

   Answer: 6,072

   $L = 92$ $W = 66$
   $A = LW$
   $A = (92)(66)$
   $A = 6072$

   92
   $\times \ 66$
   552
   6072

---

20. One ounce of nuts contains 194 calories. How many calories are in 6 ounces of nuts?

   [   ] calories

   Answer: 1164

   $\dfrac{1}{194} = \dfrac{6}{N}$
   $1(N) = 194(6)$
   $N = 1164$

   194
   $\times \ \ 6$
   1164

21. The Thespian club at a local community college is ordering T-shirts. T-shirts size S, M, or L cost $11 each and T-shirts size XL or XXL cost $14 each. Use the table on the right to find the total cost. (The first row is filled in for you.)

T-Shirt Size	Number of Shirts Ordered	Cost per Shirt	Cost per Size Ordered
S	4	$11	$44
M	5		
L	3		
XL	10		
XXL	4		

Total Cost ____

T-Shirt Size	Number of Shirts Ordered	Cost per Shirt	Cost per Size Ordered
S	4	$11	$44
M	5	$ 11	$ 55
L	3	$ 11	$ 33
XL	10	$ 14	$ 140
XXL	4	$ 14	$ 56

Total Cost$ _____

```
   1
   44
2  55
   33
   140
+  56
 ─────
 (328)
```

Answers 11

55

11

33

14

140

14

56

328

22. A plant for a tea company has bagging machines capable of bagging 3000 bags of tea per minute. If the plant runs 18 hours a day, how many tea bags are produced in one day?

The company produces [ ] tea bags in one day of operation.

Answer: 3,240,000

```
18
x 60
─────
00
108
─────
1080
```

(3000)(18 hours) =
(3000)(18 * 60) ← convert minutes to
(3000)(1080) ← minutes

```
    2
  1080
x 3000
──────
  0000
 0000
0000
3240
──────
3,240,000
```

23. Divide the following and then check by multiplying.

$8\,\overline{)\,368}$

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

○ **A.** The quotient does not have a remainder. The quotient is _____ .

○ **B.** The quotient has a remainder not equal to 0. The quotient is _____ R

_____ .

○ **C.** The quotient is undefined.

Answer: A. The quotient does not have a remainder. The quotient is ⟨ 46 ⟩ .

handwritten:
46
8) 368
− (32)
48
− (48)
0 rem

---

24. Divide the following and then check by multiplying.

$4\,\overline{)\,1990}$

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

○ **A.** The quotient does not have a remainder. The quotient is _____ .

○ **B.** The quotient has a remainder not equal to 0. The quotient is _____ R

_____ .

○ **C.** The quotient is undefined.

Answer: B. The quotient has a remainder not equal to 0. The quotient is ⟨ 497 ⟩ R ⟨ 2 ⟩ .

handwritten:
497
4) 1990
− (16)
39
− (36)
30
− (28)
2 rem

---

25. A truck hauls wheat to a storage granary. It carries a total of 7,836 bushels of wheat in 12 trips. How much does the truck haul each trip if each trip it hauls the same amount?

The truck hauls [_____] bushels each trip.

Answer: 653

handwritten:
$\dfrac{7836}{12}$

653
12) 7836
− (72)
63
− (60)
36
− (36)
0 rem

---

26. Suppose the elevation of a peak on a certain planet is 21,120 feet. A mile is 5280 feet. How many miles tall is the peak?

The peak is [_____] miles tall.

Answer: 4

handwritten:
$\dfrac{21120}{5280}$

4
5280) 21120
− (21120)
0 rem

---

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

10, 25, 52, 27, 11, 19

The average value is [_____] .

Answer: 24

handwritten:
rewrite 10, 11, 19, 25, 27, 52

$\dfrac{10+11+19+25+27+52}{6} =$

$\dfrac{144}{6} =$

24 =

24
6) 144
− (12)
24
− (24)
0 rem

10
11
19
25
27
+52
144

28. Evaluate.

7^3

$7^3 =$ _____

Answer: 343

Handwritten: $7^3 =$ $7 \cdot 7 \cdot 7 =$ $49 \cdot 7 =$ $343 =$

Handwritten: $\begin{array}{r} 49 \\ \times\, 7 \\ \hline 343 \end{array}$

---

29. Simplify.

$20 + 8 \cdot 5$

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

○ **A.** $20 + 8 \cdot 5 =$ _____

○ **B.** The expression is undefined.

Answer: A. $20 + 8 \cdot 5 =$ | **60** |

Handwritten: PEMDAS $20 + 8 \cdot 5 =$ $20 + 40 =$ $60 =$

---

30. Simplify.

$30 \div 6 \cdot 5 + 9$

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

○ **A.** $30 \div 6 \cdot 5 + 9 =$ _____

○ **B.** The expression is undefined.

Answer: A. $30 \div 6 \cdot 5 + 9 =$ | **34** |

Handwritten: PEMDAS $30 \div 6 \cdot 5 + 9 =$ $5 \cdot 5 + 9 =$ $25 + 9 =$ $34 =$

---

31. Simplify.

$30 \div 5 - 6$

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

○ **A.** $30 \div 5 - 6 =$ _____

○ **B.** The expression is undefined.

Answer: A. $30 \div 5 - 6 =$ | **0** |

Handwritten: PEMDAS $30 \div 5 - 6 =$ $6 - 6 =$ $0 =$

32. Simplify.

$$37 + \frac{21}{3}$$

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

○ **A.** $37 + \frac{21}{3} =$ _____

○ **B.** The expression is undefined.

Answer: A. $37 + \frac{21}{3} =$ [44]

Handwritten work:
PEMDAS
$37 + \frac{21}{3} =$
$37 + 7 =$
$\begin{array}{r} 37 \\ + 7 \\ \hline 44 \end{array}$
$44 =$

---

33. Simplify.

$$2 \cdot 3 + 6 \cdot 7$$

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

○ **A.** $2 \cdot 3 + 6 \cdot 7 =$ _____

○ **B.** The expression is undefined.

Answer: A. $2 \cdot 3 + 6 \cdot 7 =$ [48]

Handwritten work:
PEMDAS
$2 \cdot 3 + 6 \cdot 7 =$
$6 + 6 \cdot 7 =$
$6 + 42 =$
$48 =$

---

34. Simplify.

$$(6 + 2) \cdot (5 - 2)$$

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

○ **A.** $(6 + 2) \cdot (5 - 2) =$ _____

○ **B.** The expression is undefined.

Answer: A. $(6 + 2) \cdot (5 - 2) =$ [24]

Handwritten work:
PEMDAS
$(6 + 2) \cdot (5 - 2) =$
$(8) \cdot (3) =$
$8 \cdot 3 =$
$24 =$

---

35. Simplify.

$$3^4 - [34 - (10 - 5)]$$

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

○ **A.** $3^4 - [34 - (10 - 5)] =$ _____

○ **B.** The expression is undefined.

Answer: A. $3^4 - [34 - (10 - 5)] =$ [52]

Handwritten work:
PEMDAS
$3^4 - [34 - (10 - 5)] =$
$3^4 - [34 - (5)] =$
$3^4 - [34 - 5] =$
$3^4 - [29] =$
$3^4 - 29 =$
$3 \cdot 3 \cdot 3 \cdot 3 - 29 =$
$81 - 29 =$
$52 =$

36. Evaluate the expression for x = 2 and z = 3.

   $6xz - 5x$

   $6xz - 5x =$ [_____]

   Answer: 26

PEMDAS

$6xz - 5x =$
$6(2)(3) - 5(2) =$
$6(6) - 5(2) =$
$36 - 10 =$
$26 =$

---

37. Evaluate the algebraic expression for the given value.

   $x^2 - 5x + 6$, for $x = 6$

   When x = 6, $x^2 - 5x + 6 =$ [_____].
   (Simplify your answer.)

   Answer: 12

PEMDAS

$x^2 - 5x + 6 =$
$(6)^2 - 5(6) + 6 =$
$(6)(6) - 5(6) + 6 =$
$36 - 30 + 6 =$
$6 + 6 =$
$12 =$

---

38. Simplify.

   $2 + 8 \cdot 5 - 15$

   $2 + 8 \cdot 5 - 15 =$ [_____]

   Answer: 27

PEMDAS

$2 + 8 \cdot 5 - 15 =$
$2 + 40 - 15 =$
$42 - 15 =$
$27 =$

---

39. Solve. Check your solution.

   $x + 3 = 7$

   The solution is x = [_____].

   Answer: 4

$x + 3 = 7$
$x + 3 - 3 = 7 - 3$
$x = 4$

Check
$x + 3 = 7$
$(4) + 3 = 7$
$4 + 3 = 7$
$7 = 7$ Good

---

40. Solve.

   $8x = 56$

   The solution is x = [_____].

   Answer: 7

$8x = 56$
$\frac{8x}{8} = \frac{56}{8}$
$x = 7$

Check
$8x = 56$
$8(7) = 56$
$56 = 56$ Good

---

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

   $x - 5 = -3 + 4$

   The solution is x = [_____].

   Answer: 6

$x - 5 = -3 + 4$
$x - 5 = 1$
$x - 5 + 5 = 1 + 5$
$x = 6$

Check
$x - 5 = -3 + 4$
$(6) - 5 = -3 + 4$
$6 - 5 = -3 + 4$
$1 = 1$
Good

---

42. Solve the following equation.

$2x - 2 = 0$

$x = $ ____

Answer: 1

Handwritten work:
$2x - 2 = 0$
$2x - 2 + 2 = 0 + 2$
$2x = 2$
$\frac{2x}{2} = \frac{2}{2}$
$\boxed{x = 1}$

Check:
$2x - 2 = 0$
$2(1) - 2 = 0$
$2 - 2 = 0$
$0 = 0$
Good

43. Solve the equation.

$5n + 15 = 55$

$n = $ ____

Answer: 8

Handwritten work:
$5n + 15 = 55$
$5n + 15 - 15 = 55 - 15$
$5n = 40$
$\frac{5n}{5} = \frac{40}{5}$
$\boxed{n = 8}$

Check:
$5n + 15 = 55$
$5(8) + 15 = 55$
$40 + 15 = 55$
$55 = 55$
Good

44. Write a fraction to represent the shaded part of the syringe.
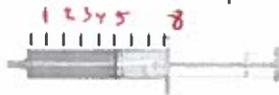
The fraction represented by the shaded parts is ____.

Answer: $\dfrac{5}{8}$

Handwritten: $\dfrac{5}{8}$

45. Find the prime factorization of the following number.

45

The prime factorization of 45 is ____.

Answer: $3^2 \cdot 5$

Handwritten work:
Primes 2, 3, 5, 7, 11, 13, 17, 19...
$3 | 45$
$3 | 15$
$5 | 5$
1
$45 = \boxed{3 \cdot 3 \cdot 5}$
OR
$45 = \boxed{3^2 \cdot 5}$

46. Find the prime factorization of the following number.

8

The prime factorization of 8 is ____.

Answer: 2^3

Handwritten work:
Primes 2, 3, 5, 7, 11, 13, 17, 19...
$2 | 8$
$2 | 4$
$2 | 2$
1
$8 = \boxed{2 \cdot 2 \cdot 2}$
OR
$8 = \boxed{2^3}$

47. Write the prime factorization of 304.

The prime factorization of 304 is (1) [_____]

(1) ○ $2^5 \cdot 19$.   ○ $2 \cdot 3 \cdot 5 \cdot 7$.
    ○ $2^4 \cdot 19$.
    ○ $2^3 \cdot 19$.
    ○ $2 \cdot 19$.

Answer: (1) $2^4 \cdot 19$.

Primes
2, 3, 5, 7, 11, 13, 17, 19, -----

2 | 304
2 | 152
2 | 76
2 | 38
19 | 19
1

$304 = (2 \cdot 2 \cdot 2 \cdot 2 \cdot 19)$
OR
$304 = (2^4 \cdot 19)$

---

48. Find the prime factorization of the following number.

70

The prime factorization of 70 is [_____].

Answer: $2 \cdot 5 \cdot 7$

Primes 2, 3, 5, 7, 11, 13, 17, 19, ...

2 | 70
5 | 35
7 | 7
1

$70 = (2 \cdot 5 \cdot 7)$
OR
$70 = 7 \cdot 5 \cdot 2$

49.
Divide $-\dfrac{11}{12} \div 22$. Write the quotient in simplest form.

$-\dfrac{11}{12} \div 22 = $ [_____] (Type an integer or a fraction.)

Answer: $-\dfrac{1}{24}$

$\dfrac{-11}{12} \div 22 =$

$\dfrac{-11}{12} \div \dfrac{22}{1} =$

$\dfrac{-11}{12} \cdot \dfrac{1}{22} =$

$\dfrac{-1(11)}{(2)(2)(3)} \cdot \dfrac{1}{(2)(11)} = \dfrac{-1(1)}{(2)(2)(3)(2)} = \left(\dfrac{-1}{24}\right)$

Primes
2, 3, 5, 7, 11, ..
2 | 12   2 | 22
2 | 6   11 | 11
3 | 3   1
1

---

50. Perform the indicated operation.

$6 \div \dfrac{5}{14}$

$6 \div \dfrac{5}{14} = $ [_____] (Simplify your answer.)

Answer: $\dfrac{84}{5}$

$6 \div \dfrac{5}{14} =$

$\dfrac{6}{1} \div \dfrac{5}{14} =$

$\dfrac{6}{1} \cdot \dfrac{14}{5} =$

$\dfrac{(2)(3)}{(1)} \cdot \dfrac{(2)(7)}{(5)} =$

$\dfrac{(2)(3)(2)(7)}{5} = \left(\dfrac{84}{5}\right)$

Prime 2, 3, 5, 7, 11, 13
2 | 6   2 | 14
3 | 3   7 | 7
1   1

51. Perform the indicated operation.

$$\frac{1}{3} \div \frac{11}{6}$$

$\frac{1}{3} \div \frac{11}{6} = $ [   ] (Type an integer or a simplified fraction.)

Answer: $\frac{2}{11}$

52. Find $\frac{1}{4}$ of 40.

$\frac{1}{4}$ of 40 is [   ]. (Simplify your answer. Type a whole number, fraction, or mixed number.)

Answer: 10

53. Find $\frac{3}{5}$ of 30. Write the answer in simplest form.

$\frac{3}{5}$ of 30 is [   ]. (Simplify your answer.)

Answer: 18

54. Insert <, >, or = between the pair of numbers to form a true statement.

4.597   4.6

4.597 [   ] 4.6

Answer: <

55. Write <, >, or = between the pair of numbers to form a true statement.

0.33400   0.334

0.33400 [   ] 0.334

Answer: =

56. Round the decimal to the nearest tenth.

    0.93

    0.93 rounded to the nearest tenth is [ ].

    Answer: 0.9

0.93

since
3 < 5
do not round
up

0.9

57. Round 0.6088 to the nearest thousandth.

    $0.6088 \approx$ [ ]

    Answer: 0.609

0.6088 since
8 ≥ 5
round up

0.609

58. Round the monetary amount to the nearest dollar.

    $96.20

    $96.20 rounded to the nearest dollar is $[ ].

    Answer: 96

$96.20

since
2 < 5
do not
round up

96

59. Write as a decimal.

    $3\dfrac{1}{100}$

    $3\dfrac{1}{100} =$ [ ]

    Answer: 3.01

$3\frac{1}{100} =$

$3 + \frac{1}{100} =$ rewrite

$3 + .01 =$

$3.01 =$

$100\overline{)1.00}$
$-(100)$

$.01$

Oren

60. Add the following.

    8.4 + 8.21

    8.4 + 8.21 = [ ] (Type an integer or a decimal.)

    Answer: 16.61

8.40 rewrite
+ 8.21
16.61

61. Subtract and check the following.

    15 − 3.3

    15 − 3.3 = [ ] (Type an integer or a decimal.)

    Answer: 11.7

15.0
−3.3
11.7

62. A landscape architect is planning a border for a flower garden shaped like a triangle. The sides of the garden measure 16.3 feet, 23.55 feet, and 22.9 feet. Find the amount of border material needed.

[handwritten, upper right] B — 23.55 feet — 16.3 feet — 22.9 feet — A — C
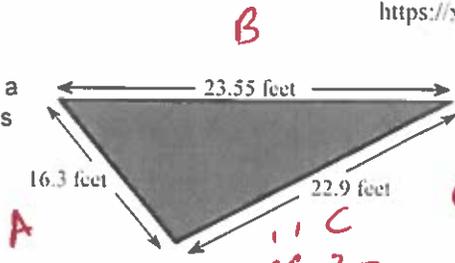
$P = A + B + C$
$P = 16.3 + 23.55 + 22.9$
$P = 62.75$

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

[handwritten]
16.30
23.55
+22.90
62.75

Answer: 62.75

63.

The bar graph shows the top five chocolate-consuming nations in the world. Use this graph to answer the following.

Which country has the greatest chocolate consumption per person?

Choose the correct answer below.

○ Country E
○ Country B
✗ Country C
○ Country D
○ Country A

The World's Top Chocolate-Consuming Countries

Pounds of Chocolate per Person per Year

A: 18.40
B: 21.83
C: 26.24
D: 20.94
E: 21.94
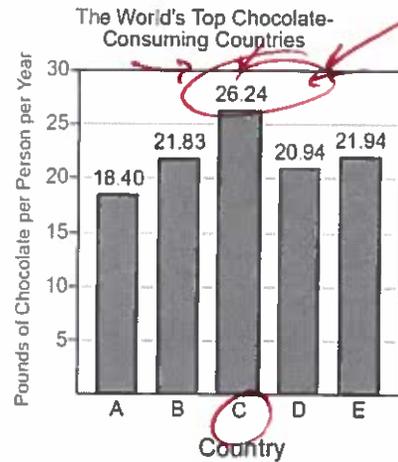
Country

Answer: Country C

64. 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

[handwritten]
.25   .10   .05
× 2   × 4   × 3
.50   .40   .15

.50
.40
+.15
1.05

The total value of the group is $☐ .

Answer: 1.05

65.

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

32 ft

$C = \pi D$
$C = \pi(32)$
$C = 32\pi$

$C = \pi D$
$C = 3.14 D$
$C = 3.14(32)$
$C = 100.48$
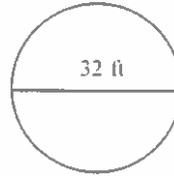
a. Find the circumference of the circle in terms of π.

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
$\times 32$
$\overline{628}$
942
$\overline{100.48}$

Answers 32π

100.48

66. A 1-ounce serving of cream cheese contains 6.8 grams of saturated fat. How much saturated fat is in 6 ounces of cream cheese?

[   ] g

$\dfrac{1}{6.8} = \dfrac{6}{N}$

$1(N) = 6.8(6)$

$N = 40.8$

6.8
$\times\ 6$
$\overline{40.8}$

Answer: 40.8

67. The screen of a portable digital device is a rectangle that measures 3.5 inches by 2.4 inches. Find the area of the screen.

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

$L = 3.5$ $W = 2.4$

$A = L \cdot W$
$A = (3.5)(2.4)$
$A = 8.40$

3.5
$\times 2.4$
$\overline{140}$
70
$\overline{8.40}$

Answer: 8.4

68. The diameter of a ferris wheel is 280 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.)

$C = \pi D$
$C = \pi(280)$
$C = 280\pi$

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

$C = \pi D$
$C = 3.14 D$
$C = 3.14(280)$
$C = 879.20$

Answers 280π

879.20

280
$\times\ 3.14$
$\overline{1120}$
280
840
$\overline{879.20}$

69. A meter is a unit of length approximately equal to 39.37 inches. If someone is 1.64 meters tall, what is his or her approximate height in inches?

    Using the given conversion, someone who is 1.64 meters tall has a height of [ ] inches.
    (Type an integer or a decimal.)

    Answer: 64.5668

$$\frac{1}{39.37} = \frac{1.64}{N}$$

cross mult $1(N) = 39.37(1.64)$

$N = 64.5668$

---

70. One year, farmers received an average of $12.095 per bushel of wheat. How much did a farmer receive for selling 100 bushels of wheat?

    The farmer received $[ ]. (Round to the nearest cent as needed.)

    Answer: 1209.50

$$
\begin{array}{r}
12.095 \\
\times \quad 100 \\
\hline
00000 \\
00000 \\
12095 \\
\hline
1209.500
\end{array}
$$

---

71. Perform the indicated operation.

    3.7 + 0.05

    3.7 + 0.05 = [ ] (Type an integer or a decimal.)

    Answer: 3.75

$$
\begin{array}{r}
3.70 \\
+ 0.05 \\
\hline
3.75
\end{array}
$$

---

72. Find the decimal equivalent of the following fraction.

    $\dfrac{11}{20}$

    $\dfrac{11}{20} =$ [ ]

    Answer: 0.55

$$
\begin{array}{r}
.55 \\
20\,\overline{)11.00} \\
-(100) \\
\hline
100 \\
-(100) \\
\hline
0 \text{ rem}
\end{array}
$$

---

73. Write as an equivalent decimal.

    $\dfrac{1}{4}$

    $\dfrac{1}{4} =$ [ ]

    Answer: 0.25

$$
\begin{array}{r}
.25 \\
4\,\overline{)1.00} \\
-(8) \\
\hline
20 \\
-(20) \\
\hline
0 \text{ rem}
\end{array}
$$

---

74. Write $2\dfrac{7}{20}$ as a decimal.

    $2\dfrac{7}{20} =$ [ ]

    Answer: 2.35

$2\dfrac{7}{20} =$

$2 + \dfrac{7}{20} =$

$2 + .35 =$

$2.35 =$

$$
\begin{array}{r}
.35 \\
20\,\overline{)7.00} \\
-(60) \\
\hline
100 \\
-(100) \\
\hline
0 \text{ rem}
\end{array}
$$

75. Find the value of the following expression. Give the result as a decimal.

$$\frac{3}{5} - 3(7.3)$$

$\frac{3}{5} - 3(7.3) = $ ⬚ (Type an integer or a decimal.)

Answer: -21.3

(handwritten:)
$\frac{3}{5} - 3(7.3) =$
$\frac{3}{5} - 21.9 =$
$.6 - 21.9 =$
$0.6 - 21.9 =$
$\rightarrow -21.3 =$

$\begin{array}{r} 7.3 \\ \times\ 3 \\ \hline 21.9 \end{array}$

$\begin{array}{r} .6 \\ 5\overline{)3.0} \\ 30 \end{array}$

$\begin{array}{r} 21.9 \\ -0.6 \\ \hline 21.3 \end{array}$
NEGATIVE

76.

The circle graph is a result of surveying 800 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. Campus housing
- ○ B. Other arrangements
- ○ C. Off-campus rental
- ○ D. Own off-campus housing
- ✗ E. Parent or guardian's home

■ Parent or guardian's home 280
■ Off-campus rental 215
▨ Campus housing 220
□ Other arrangements 13
■ Own off-campus housing 72
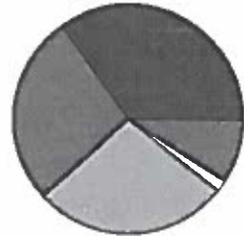
Answer: E. Parent or guardian's home

77.
Find the square root.

$$\sqrt{49}$$

Answer: 7

$\sqrt{49} = $ ⬚

(handwritten:)
$\sqrt{49} =$
$7 =$

$7 \cdot 7 =$
$49 =$

78.
Find the length of the third side of the right triangle.
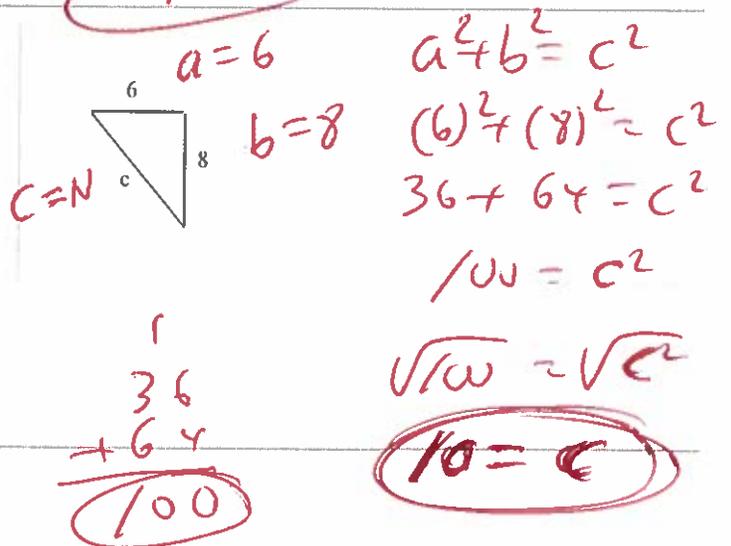
The length of the third side is ⬚ .

Answer: 10

(handwritten:)
$a = 6$
$b = 8$
$C = N$
6
8
c

$a^2 + b^2 = c^2$
$(6)^2 + (8)^2 = c^2$
$36 + 64 = c^2$
$\sqrt{100} = c^2$
$\sqrt{100} = \sqrt{c^2}$
$10 = c$

$\begin{array}{r} 36 \\ +64 \\ \hline 100 \end{array}$

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

    leg = 3, leg = 4

    What is the length of the side not given?

    [   ] (Round to the nearest thousandth as needed.)

    Answer: 5

Handwritten work:
$c = N$
$a = 3$
$b = 4$
$a^2 + b^2 = c^2$
$(3)^2 + (4)^2 = c^2$
$9 + 16 = c^2$
$25 = c^2$
$\sqrt{25} = \sqrt{c^2}$
$5 = c$

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

    leg = 48, hypotenuse = 73

    The unknown length is [   ].
    (Type an integer or decimal rounded to the nearest thousandth as needed.)

    Answer: 55

Handwritten work:
$c = 73$
$a = 48$
$b = N$
$a^2 + b^2 = c^2$
$(48)^2 + b^2 = (73)^2$
$2304 + b^2 = 5329$
$2304 + b^2 - 2304 = 5329 - 2304$
$b^2 = 3025$
$\sqrt{b^2} = \sqrt{3025}$
$b = 55$

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

    (Triangle A: sides 25, 17.5, 10. Triangle B: sides 10, 7, 4.)
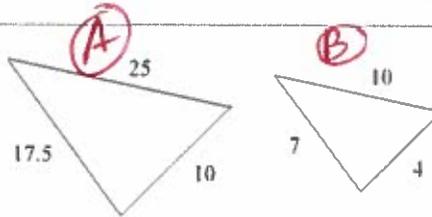
    The ratio of the corresponding sides of the first triangle to the second triangle is [   ].
    (Type the ratio as a simplified fraction.)

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

Handwritten work:
$\dfrac{A}{B} = \dfrac{5(y)}{2(5)} =$
$\dfrac{25}{10} = \dfrac{5}{2} =$

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

    (Triangle with sides 9, 13.5; smaller triangle with sides 3, n.)

    n = [   ]
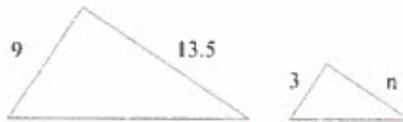
    Answer: 4.5

Handwritten work:
$\dfrac{9}{13.5} = \dfrac{3}{n}$ cross mult
$9(n) = 13.5(3)$
$9n = 40.5$
$\dfrac{9n}{9} = \dfrac{40.5}{9}$
$n = 4.5$

$13.5 \times 3 = 40.5$

$9 \overline{)40.5}$
$-(36)$
45
$-(45)$
0 rem

83. 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.

40 ft

28 ft   4 ft
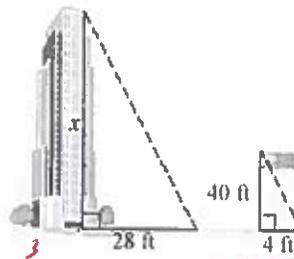
$$\frac{x}{28} = \frac{40}{4}$$

$$4(x) = 28(40)$$

$$4x = 1120$$

$$\frac{4x}{4} = \frac{1120}{4}$$

$$x = 280$$

The height of the building is [ ] feet.

$$\begin{array}{r} 28 \\ \times 40 \\ \hline 00 \\ 112 \\ \hline 1120 \end{array}$$

$$\begin{array}{r} 270 \\ 4\overline{)1120} \\ -(8) \\ \hline 32 \\ -(32) \\ \hline 0 \end{array}$$

Answer: 280

---

84. Draw a tree diagram for choosing a vowel, (a, e, i, o, u) and then a number (1, 2 or 3). Use the diagram to find the number of possible outcomes.
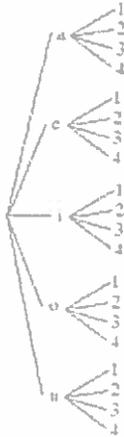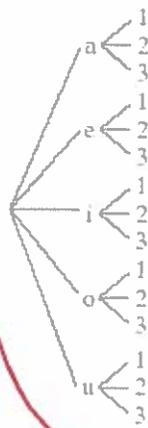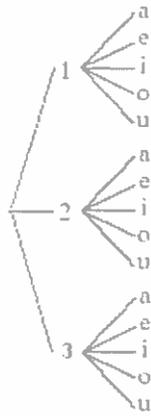
○ A.   ✗ B.   ○ C.   ○ D.

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

Answers

B.

15

(vowel)(number)

(5)(3) =

15 =

$$a \lessgtr \begin{matrix}1\\2\\3\end{matrix}$$

$$e \lessgtr \begin{matrix}1\\2\\3\end{matrix}$$

$$i \lessgtr \begin{matrix}1\\2\\3\end{matrix}$$

$$o \lessgtr \begin{matrix}1\\2\\3\end{matrix}$$

$$u \lessgtr \begin{matrix}1\\2\\3\end{matrix}$$
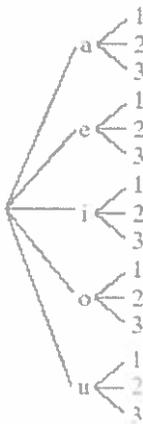
85.

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
B

○ **B.**

R
R
B
B

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

○ **C.**

R
R

✗ **D.**

R
B

Answers

R
D. B

2

---
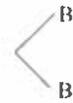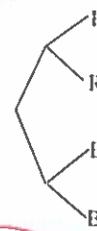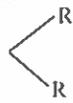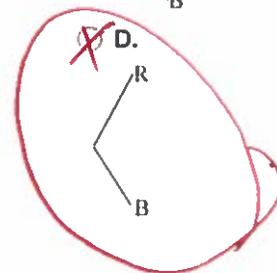
86. If a single 8-sided die is tossed once, find the probability of rolling a 1 or a 7.

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

Answer: $\frac{1}{4}$

(handwritten) 1, 2, 3, 4, 5, 6, 7, 8

$\frac{\text{Prob of 1 or 7}}{\text{all}} = \frac{1+1}{8} = \frac{2}{8} = \frac{2(1)}{4(4)} = \frac{1}{4}$

---

87. A marble is selected at random from a jar containing 5 red marbles, 2 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: $\frac{5}{13}$

(handwritten) $\frac{red}{all} = \frac{red}{red + yellow + green}$

$\frac{5}{5+2+6} = \frac{5}{13}$

88. Find the perimeter of the following figure.

11 ft | Rectangle

15 ft
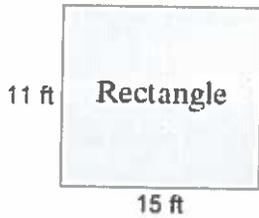
Perimeter = [   ] (1) [   ]

(1) ○ ft
    ○ sq. ft

Answers 52

(1) ft

$L = 15$ $W = 11$

$P = 2L + 2W$

$P = 2(15) + 2(11)$

$P = 30 + 22$

$P = 52$

89. Find the perimeter of the following figure.

Parallelogram   32 cm

42 cm
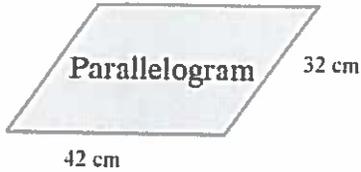
Perimeter = [   ] (1) [   ]

(1) ○ sq. cm
    ○ cm

Answers 148

(1) cm

$L = 42$ $W = 32$

$P = 2L + 2W$

$P = 2(42) + 2(32)$

$P = 84 + 64$

$P = 148$

$\begin{array}{r} 84 \\ +64 \\ \hline 148 \end{array}$

90. Find the perimeter of the following figure.

B

4 in.   6 in.

A

8 in. C
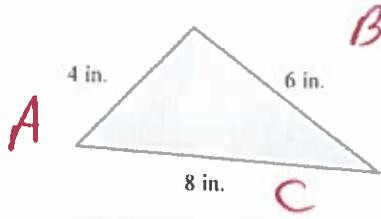
$P = A + B + C$
$P = 4 + 6 + 8$
$P = 10 + 8$
$P = 18$

The perimeter is [ ] (1) [ ]

(1) ○ sq. in.
    ○ in.

Answers 18

        (1) in.

---

91. Find the perimeter of the figure shown to the right.

$P = A + B + C + D + E$
$P = 24 + 27 + 25 + 25 + 32$
$P = \quad 51 + 25 + 25 + 32$
$P = 76 + 25 + 32$
$P = 101 + 32 \quad P = 133$

B

27 ft   25 ft C

A 24 ft   25 ft D

        32 ft
          E
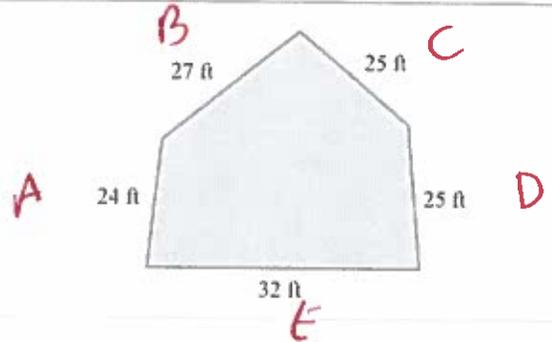
Perimeter = [ ] (1) [ ]

(1) ○ sq. ft.
    ○ ft.

Answers 133

        (1) ft.

---

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

14   14

14   14 m

        14

Perimeter = [ ] (1) [ ]

$P = 5N$
$P = 5(14)$
$P = 70$
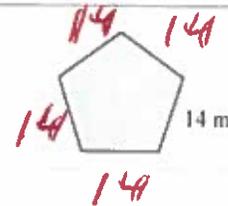
(1) ○ sq m
    ○ m

Answers 70

        (1) m

L
14
$\times 5$
$\overline{70}$

93. A computer has shape of a rectangular solid. Find the volume of the computer, with dimensions of 4 inches by 4 inches by 4.4 inches.

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

(1) ○ sq in.
    ○ cu in.
    ○ in.
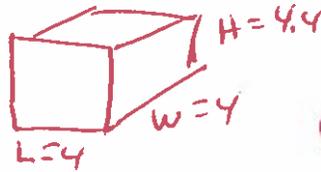
Answers 70.4

(1) cu in.

$L=4, \; w=4, \; H=4.4$

$V = LWH$

$V = (4)(4)(4.4)$

$V = 16(4.4)$

$V = 70.4$

$\begin{array}{r} 16 \\ \times 4.4 \\ \hline 164 \\ 64 \\ \hline 70.4 \end{array}$

$H = 4.4$ $W = 4$ $L = 4$

94. Insert <, >, or = in the space between the paired numbers to make the statement true.

2 __ 5

2 (1) [____] 5

(1) ○ <
    ○ >
    ○ =

Answer: (1) <

$2 < 5$

95. Insert <, >, or = in the space between the paired numbers to make the statement true.

7 __ 5

7 [____] 5

Answer: >

$7 > 5$

96. Use the commutative and associative properties to simplify the expression.

(16 + a) + 16

(16 + a) + 16 = [____]

Answer: a + 32

$(16 + a) + 16 =$
$16 + a + 16 =$
$a + 16 + 16 =$
$a + 32 =$

97.

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

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

(1, 3)

right 1   up 3
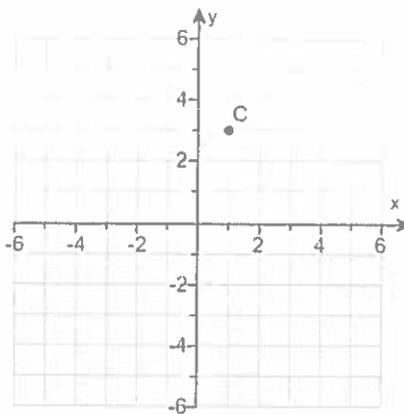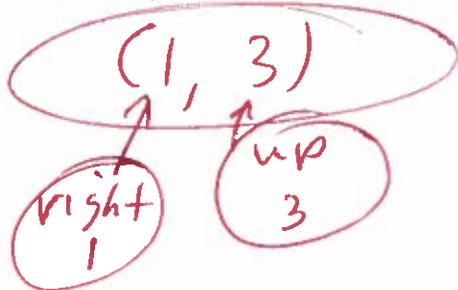
Answer: (1,3)

---

98. Determine whether each ordered pair is a solution of the given linear equation.

   4x + 3y = 18; (3,3), (6,0), (0,6)

Is (3,3) a solution to the given linear equation?

○ No
○ Yes

Is (6,0) a solution to the given linear equation?

○ Yes
○ No

Is (0,6) a solution to the given linear equation?

○ Yes
○ No

Answers No

      No

      Yes

$4x + 3y = 18$ $(3,3)$
                               $x \quad y$

$4(3) + 3(3) = 18$
$12 + 9 = 18$
$21 \neq 18$ NO ✗

$4x + 3y = 18$ $(6,0)$
                               $x \quad y$
$4(6) + 3(0) = 18$
$24 + 0 = 18$ NO ✗
$24 \neq 18$

$4x + 3y = 18$ $(0,6)$
                               $x \quad y$
$4(0) + 3(6) = 18$
$0 + 18 = 18$
$18 = 18$ YES

99.

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	
−2	

Use the graphing tool to graph the equation.
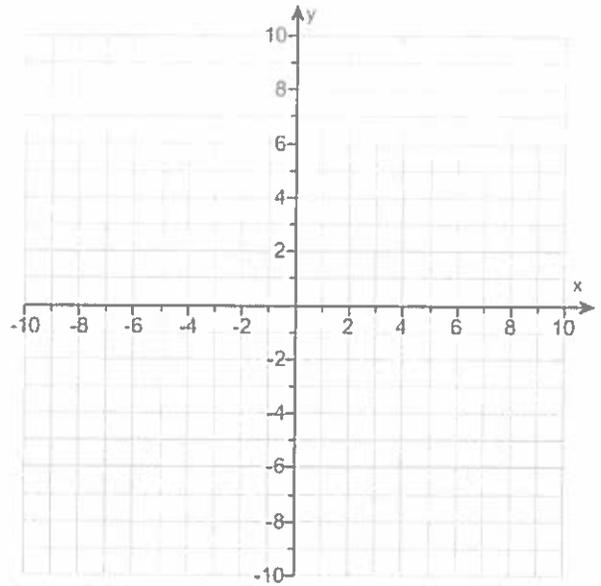
Answers 0

1

−1
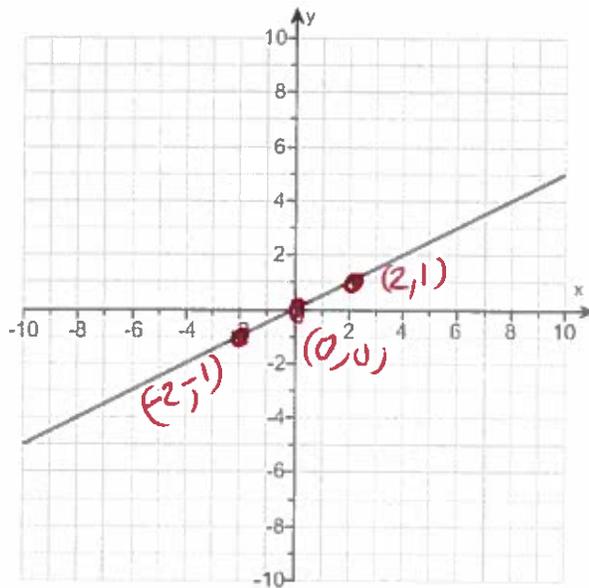
$y = \frac{1}{2}x$

$y = \frac{1}{2}(-2)$

$y = \frac{-2}{2}$

$y = -1$

$y = \frac{1}{2}(0)$

$y = 0$

$y = \frac{1}{2}(2)$

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

$y = 1$

x	y
−2	−1
0	0
2	1

100.

Graph the equation.

$y = 2x + 7$

Use the graphing tool to graph the line.
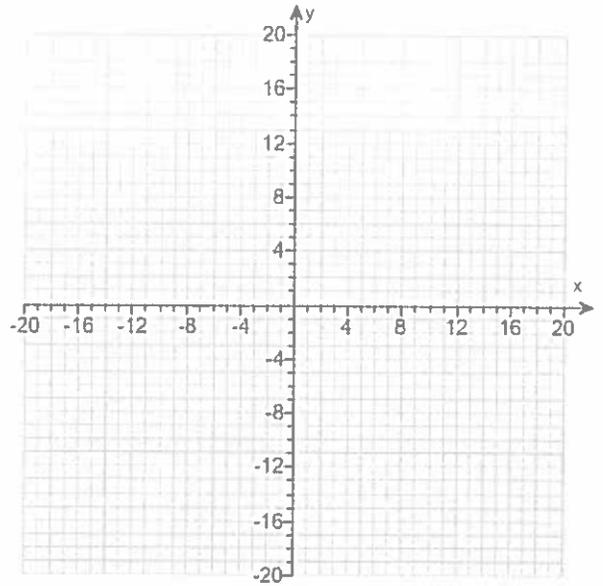
Answer:
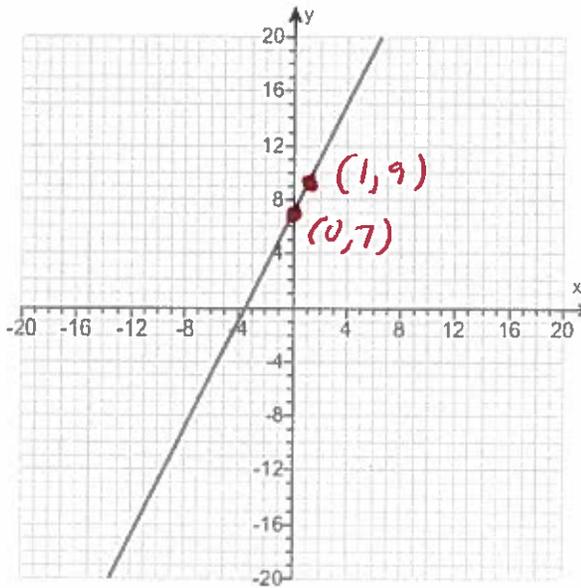
$y = 2x + 7$

$y = 2(0) + 7$

$y = 0 + 7$

$y = 7$

$y = 2(1) + 7$

$y = 2 + 7$

$y = 9$

x	y
0	7
1	9

101.

Graph the linear equation.

$y = -3x$

Use the graphing tool to graph the linear equation.
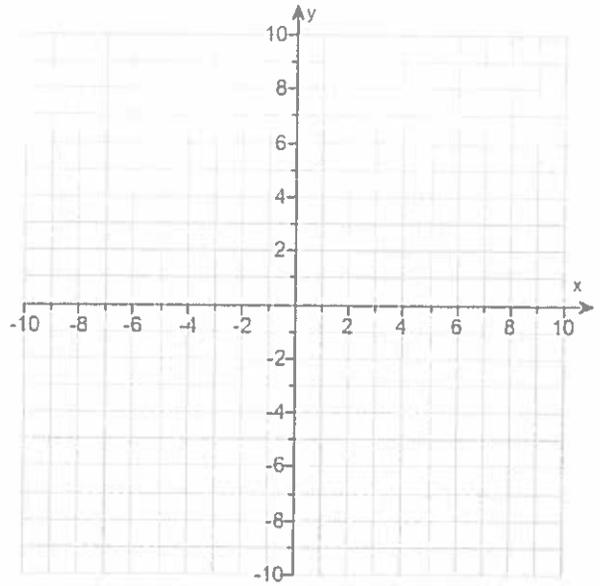
Answer:
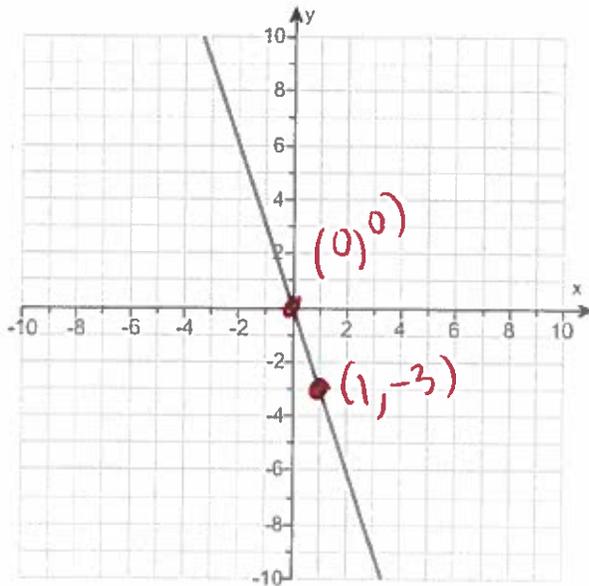
$y = -3x$

$y = -3(0)$

$y = 0$

$y = -3(1)$

$y = -3$

x	y
0	0
1	-3

(0, 0)

(1, -3)

102. Given the following function, find f(− 2), f(0), and f(1).

$f(x) = 5x − 5$

$f(-2) = $ [   ]

$f(0) = $ [   ]

$f(1) = $ [   ]

(handwritten)
$f(x) = 5x - 5$
$f(-2) = 5(-2) - 5$
$f(-2) = -10 - 5$
$f(-2) = -15$

$f(x) = 5x - 5$
$f(0) = 5(0) - 5$
$f(0) = 0 - 5$
$f(0) = -5$

$f(x) = 5x - 5$
$f(1) = 5(1) - 5$
$f(1) = 5 - 5$
$f(1) = 0$

Answers − 15

  − 5

  0

103. Given the function $f(x) = 5x + 7$, find the indicated values.

(a) f(6)
(b) f(a)

(a) f(6) = [   ] (Simplify your answer.)

(b) f(a) = [   ] (Simplify your answer.)

(handwritten)
$f(x) = 5x + 7$
$f(6) = 5(6) + 7$
$f(6) = 30 + 7$
$f(6) = 37$

$f(x) = 5x + 7$
$f(a) = 5(a) + 7$
$f(a) = 5a + 7$

Answers 37

  5a + 7

104. Graph the function.

$f(x) = 5x − 1$

Choose the correct graph below.

○ A.   ○ B.   ○ C.   ✗ D.

Answer:

D.

(handwritten)
$\begin{array}{c|c} x & f(x) \\ \hline 0 & -1 \\ 1 & 4 \end{array}$
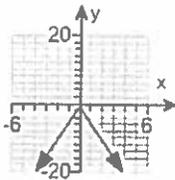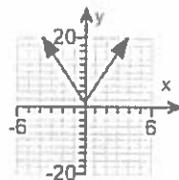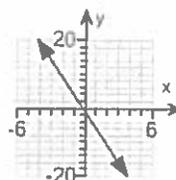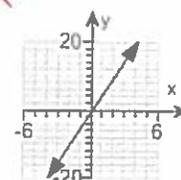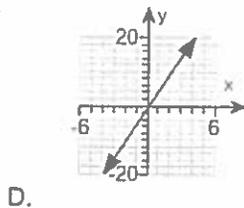
$f(x) = 5x - 1$
$f(0) = 5(0) - 1$
$f(0) = 0 - 1$
$f(0) = -1$

$f(x) = 5x - 1$
$f(1) = 5(1) - 1$
$f(1) = 5 - 1$
$f(1) = 4$

105. 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 12 centimeters.

x cm

x cm

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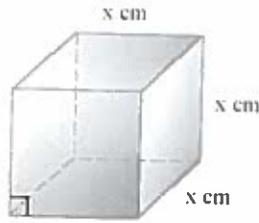
The volume is [　　　　] cubic centimeters. (Type an integer or a decimal.)

Answer: 1728

$$V(x) = x^3$$

$$V(12) = (12)^3$$

$$V(12) = (12)(12)(12)$$

$$V(12) = (144)(12)$$

$$V(12) = 1728$$

$$
\begin{array}{r}
144 \\
\times\ 12 \\
\hline
288 \\
144 \\
\hline
1728
\end{array}
$$