

To receive credit, please show your work on this page.

Formulas you will need: (You can find all of these in section 2.5)

$$I = prt$$

$$C = 2\pi r$$

$$d = rt$$

$$P = 2L + 2W$$

For each of the following problems, find the value of the missing variable. Show the equation you use to answer the question.

1.) If a round building has a circumference of 385 ft, what is the radius of the building?

2.) What rate of interest was charged (to the nearest tenth of a percent) if a man borrows \$40,000 for 5 years and pays \$4200 in interest?

3.) What is the length of the long side of a rectangle with a perimeter of 48 in and a width of 11?

4.) How fast was Marlee traveling if she covered 175 miles in 3.25 hours?

Solve the equation for the given variable:

5.) $X = YZ$ for Z

6.) $\frac{p}{a} = b$ for a

7.) $2x - y = 8$ for y

8.) $180 = a + b + c$ for c

9.) $A = \frac{1}{2}(B + b)$ for B

10.) $A = \frac{\pi r^2 S}{360}$ for S

For the following problems, set up the equation and solve it for credit:

11.) A slice of pie with ice cream has a total of 900 calories. If the pie alone has 150 more than twice the calories of the ice cream, how many calories are in each?

12.) Seth, John, and Scott each bought used motorcycles. Seth paid \$375 more than John did. Scott paid \$1300 less than twice as much as John spent. If they spent \$11,875 altogether, how much did each of them spend?

13.) Elyse and Brittney live across town from each other, 9 miles apart. They left their houses at the same time heading toward each other. Elyse walks at a pace that is 2mph slower than Brittney. If they meet after $\frac{3}{4}$ of an hour, how fast did each girl walk?

14.) The phone company charges \$21.50 a month plus 80 per 4-1-1 call. If Tristan is charged \$26.30 one month, how many 4-1-1 calls did he make?

15.) Jamie charges \$45 dollars for a caricature sketch and \$80 for a still life drawing. If he sells 18 pieces of art and makes \$1,090, how many of each did he sell?

16.) Two angles are complimentary. The second angle is 6 less than three times the first angle. What are the measures of the angles?

17.) Danielle started out with 78 clients and has a goal of adding 12 clients per month. How many months will it take her to reach her goal of 150 clients?

18.) Sydney scored 27 points during the basketball game, some worth two points and some worth one point. How many of each did she make if she made a total of 16 baskets?

19.) A rectangle has a perimeter of 54 yards. If the length of the rectangle is one less than three times the width, find the dimensions.

20.) Reazen drove to work and then back home again. On the way there it took him $\frac{3}{4}$ of an hour. On the way back, it took him 1 hour. Because of traffic, he had to drive 15mph slower on the way home. How far does he drive to work?