

Solve each problem. Write an equation, label your variables, and solve the equation.  
Make sure to answer the problem and use the proper units. Show all work.

1. Ryan's bowling score was 25 more than Brady's score. Their total score was 255. What was each person's score?

Ryan	$x+25$	$x+25+x=255$	Ryan = $x+25$
Brady	$x$	$2x+25=255$	$115+25$
		$\begin{array}{r} -25 \\ -25 \end{array}$	$140$
		$\frac{2x}{2} = \frac{230}{2}$	Brady = $x$
		$x = 115$	$= 115$

2. Julie has twice as much money as Danny. Michelle has \$5 more than Danny. They have \$109 total. How much money does each person have?

Julie	$2y$	$2y+y+y+5=109$	Julie $2(26)=52$
Danny	$y$	$4y+5=109$	Danny 26
Michelle	$y+5$	$\begin{array}{r} -5 \\ -5 \end{array}$	Michelle $26+5=31$
		$\frac{4y}{4} = \frac{104}{4}$	
		$y = 26$	

3. Find 4 consecutive integers whose sum is 214.

$$\begin{array}{r} x + x+1 + x+2 + x+3 = 214 \\ 4x + 6 = 214 \\ \begin{array}{r} -6 \\ -6 \end{array} \\ \hline 4x = 208 \\ \frac{4x}{4} = \frac{208}{4} \end{array}$$

$x = 52$
$x+1 = 53$
$x+2 = 54$
$x+3 = 55$

$x = 52$

4. Find 3 consecutive odd integers whose sum is -51.

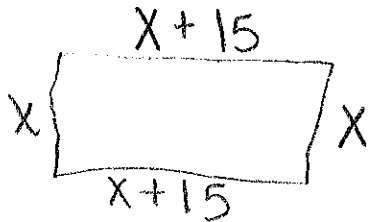
$$\begin{array}{r} x + x+2 + x+4 = -51 \\ 3x + 6 = -51 \\ \begin{array}{r} -6 \\ -6 \end{array} \\ \hline 3x = -57 \end{array}$$

$$\begin{array}{r} 3x = -57 \\ \frac{3x}{3} = \frac{-57}{3} \\ x = -19 \end{array}$$

$x = -19$
$x+2 = -17$
$x+4 = -15$

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5. The length of a rectangular yard is 15 yards more than the width. The perimeter is 270 yards. Find the length and width of the yard.



$$x + 15 + x + x + 15 + x = 270 \text{ yards}$$

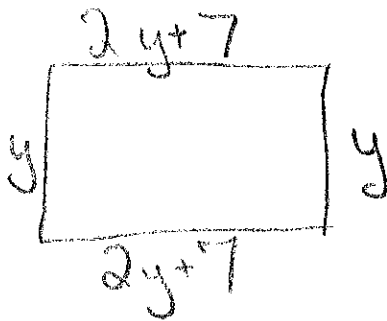
$$4x + 30 = 270 \text{ yards}$$

$$\begin{array}{r} 4x + 30 = 270 \text{ yards} \\ -30 \quad -30 \\ \hline 4x = 240 \text{ yards} \\ \hline x = 60 \text{ yards} \end{array}$$

$$\begin{array}{l} \text{Width} = 60 \text{ yards} \\ \text{Length} = 60 + 15 \text{ yards} \\ \text{Length} = 75 \text{ yards} \end{array}$$

$$x = 60 \text{ yards}$$

6. The length of a rectangle is 7 feet more than twice the width. The perimeter of the rectangle is 122 feet. Find the length and width of the rectangle.



$$2y + 7 + y + 2y + 7 + y = 122 \text{ ft.}$$

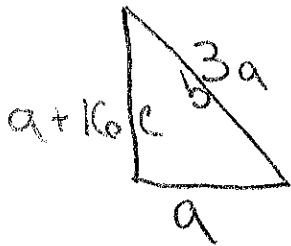
$$6y + 14 = 122 \text{ ft.}$$

$$\begin{array}{r} 6y + 14 = 122 \text{ ft.} \\ -14 \quad -14 \\ \hline 6y = 108 \text{ ft.} \\ \hline y = 18 \end{array}$$

$$\begin{array}{l} \text{Width} = 18 \text{ ft.} \\ \text{Length} = 2(18) + 7 \\ = 36 + 7 \\ = 43 \text{ ft.} \end{array}$$

$$y = 18$$

7. The perimeter of a triangle is 76 inches. Side **b** is three times as long as side **a**. Side **c** is 16 inches more than side **a**. Find the length of each side.



$$3a + a + a + 16 = 76 \text{ inches}$$

$$5a + 16 = 76 \text{ inches}$$

$$\begin{array}{r} 5a + 16 = 76 \text{ inches} \\ -16 \quad -16 \\ \hline 5a = 60 \text{ inches} \\ \hline a = 12 \text{ inches} \end{array}$$

$$a = 12 \text{ inches}$$

$$b = 3(12 \text{ in}) = 36 \text{ in.}$$

$$c = 12 + 16 = 28 \text{ in.}$$

Solve each problem by making a chart, writing an equation, solving the equation, and answering the problem.

1. Ryan has a collection of nickels, dimes, and quarters worth \$3.75. He has twice as many dimes as nickels, and 7 more quarters than nickels. How many of each coin does he have?

Value	Number	Total Value
5	$x$	$5x$
10	$2x$	$20x$
25	$x+7$	$25(x+7) = 25x + 175$

$$5x + 20x + 25x + 175 = 375$$

$$50x + 175 = 375$$

$$\begin{array}{r} 50x + 175 = 375 \\ -175 \quad -175 \\ \hline 50x = 200 \\ \frac{50x}{50} = \frac{200}{50} \\ x = 40 \end{array}$$

$$\begin{aligned} \text{Nickels} &= 40 \\ \text{Dimes} &= 2(40) = 80 \\ \text{Quarters} &= 40 + 7 = 47 \end{aligned}$$

2. Cheri has a collection of dimes and quarters worth \$3.10. She has a total of 16 coins. How many of each coin does she have?

Value	Number	Total Value
10	$x$	$10x$
25	$16-x$	$25(16-x) = 400 - 25x$

$$10x + 400 - 25x = 310$$

$$\begin{array}{r} -15x + 400 = 310 \\ -400 \quad -400 \\ \hline -15x = -90 \\ \frac{-15x}{-15} = \frac{-90}{-15} \\ x = 6 \end{array}$$

$$\begin{aligned} \text{Dimes} &= 10(6) = 60 \\ \text{Quarters} &= 16 - 6 = 10 \end{aligned}$$