

2-2 D1 Notes

Thursday, October 5, 2023 10:23 AM

Solve. For each, define a variable, translate into an equation, then find the answer to the question.

2. What ^xnumber must be added to the ^{top}numerator of $\frac{5}{12}$ to produce the ⁼fraction $\frac{2}{3}$?

3 Let $x = \text{number}$

$$12 \left(\frac{5+x}{12} \right) = \left(\frac{2}{3} \right) 12$$

$$\begin{array}{r} 5+x = 8 \\ -5 \quad -5 \\ \hline x = 3 \end{array}$$

4. The sum of two integers is thirty. Eight times ^{→ No decimals, No fractions}the smaller integer ^{30-x}is six more than five times ~~the larger integer~~. Find the integers.

18 Let $x = 1^{\text{st}}$ integer
12 $30-x = 2^{\text{nd}}$ integer (smaller)

$$8(30-x) = 5x + 6$$

$$\begin{array}{r} 240 - 8x = 5x + 6 \\ -6 \quad +8x \quad +8x \quad -6 \end{array}$$

$$\begin{array}{r} 234 = 13x \\ \underline{13} \quad \underline{13} \end{array}$$

$$18 = x$$

16. A collection of twenty-two coins has a value of \$4.75. The collection contains dimes and quarters. Find the number of quarters in the collection.

5 Let $x = \text{dimes}$
17 $22-x = \text{quarters}$

	number	x value	= total
dimes	x	10	10x
quarters	22-x	25	25(22-x)
			<u>475¢</u>

$$10x + 25(22-x) = 475$$

$$\underline{10x} + 550 - \underline{25x} = 475$$

$$\begin{array}{r} 550 - 15x = 475 \\ -550 \quad -550 \end{array}$$

$$\begin{array}{r} -15x = -75 \\ \underline{-15} \quad \underline{-15} \end{array}$$

$$x = 5$$