

HW coin word problems

1.) $3x + 30 + 5(3x) + 10x = 170$

$3x + 30 + 15x + 10x = 170$ ans:

$28x + 30 = 170$

$\underline{-30 \quad -30}$

$\underline{28x = 140}$
 $\underline{28 \quad 28}$

$x = 5$

$\$1 = 3(5) + 30 = 45$

$55 = 3(5) = 15$

$\$10 = 5$

2.) $x + 50 + 33(2x - 10) + 34x = 2245$ ans:

$x + 50 + 66x - 330 + 34x = 2245$ $1\text{¢} = 75$

$101x - 280 = 2245$

$\underline{+280 \quad +280}$

$\underline{101x = 2525}$

$\underline{101 \quad 101}$

$x = 25$

$25 + 50 = 75$

$2(25) - 10 = 40$

$33\text{¢} = 40$

$34\text{¢} = 25$

3.) $5x + 10(6x - 66) + 25(x - 11) = 1765$

$5x + 60x - 660 + 25x - 275 = 1765$

$90x - 935 = 1765$

$\underline{+935 \quad +935}$

$\underline{90x = 2700}$

$\underline{90 \quad 90}$

ans

nickels $\rightarrow x = 30$

dimes $\rightarrow 6(30 - 66) = 114$

quarters $\rightarrow 30 - 11 = 19$

4) $\left[\frac{x}{3} + \frac{10}{3}x + \frac{50}{3}x = \frac{1764}{3} \right]$

multiply the whole equation by 3

$$3x + 10x + 50x = 5292$$

$$\begin{array}{r} 43x = 5292 \\ \underline{63} \quad \underline{63} \end{array}$$

$$x = 84$$

$$\frac{1}{3}(84) = 28$$

$$\frac{2}{3}(84) = 56$$

ans:
pennies = 84
dimes = 28
quarters = 56

5) $5x + 10(15 - x) = 135$

$$5x + 150 - 10x = 135$$

$$-5x + 150 = 135$$

$$\begin{array}{r} -150 \quad -150 \\ \hline \end{array}$$

$$\begin{array}{r} -5x = -15 \\ \underline{-5} \quad \underline{-5} \end{array}$$

$$x = 3$$

$$15 - 3 = 12$$

ans:
nickels = 3
dimes = 12

6) $10x + 25(32 - x) = 470$

$$10x + 800 - 25x = 470$$

$$-15x + 800 = 470$$

$$\begin{array}{r} -800 \quad -800 \\ \hline \end{array}$$

$$\begin{array}{r} -15x = -330 \\ \underline{-15} \quad \underline{-15} \end{array}$$

$$x = 22$$

$$32 - 22 = 10$$

ans:
dimes = 22
quarters = 10

7.)

$$5x + 10(13 - x) = 85$$

$$5x + 130 - 10x = 85$$

$$-5x + 130 = 85$$

$$\underline{-130 \quad -130}$$

$$-5x = -45$$

$$\underline{-5 \quad -5}$$

$$x = 9$$

$$13 - 9 = 4$$

ans
\$5 bill - 9
\$10 bill - 4

8.) $5x + 10(2x) + 25(x + 30) = 1100$

$$5x + 20x + 25x + 750 = 1100$$

$$50x + 750 = 1100$$

$$\underline{-750 \quad -750}$$

$$50x = 350$$

$$\underline{50 \quad 50}$$

$$x = 7$$

$$2(7) = 14$$

$$7 + 30 = 37$$

ans:

nickels - 7

dimes - 14

quarters - 37