Math 70 Quiz #6 Answers

1. Starting with inner parenthesis and working outward:

$$\begin{aligned} 10t - [5t + \tfrac{1}{2}(4t+8)] &= 10t - [5t + 2t + 4] \\ &= 10t - [7t + 4] \\ &= 10t - 7t - 4 \\ &= \boxed{3t - 4} \end{aligned}$$

2. $\boxed{\text{Yes}}$ because $8 + 5 = 3(5) - 2$.

3. (a) $5 = x + 9 \quad \Rightarrow \quad \boxed{-4 = x}$ (Subtracting 9 from each side.)

   (b) $t - 8.5 = -1 \quad \Rightarrow \quad \boxed{t = 7.5}$ (Adding 8.5 to both sides.)

   (c) $\frac{1}{4}x = 12 \quad \Rightarrow \quad \boxed{x = 48}$ (Dividing both sides by $\frac{1}{4}$ OR multiplying by 4.)

   (d) $10a - 2a = 3.2 \quad \Rightarrow \quad 8a = 3.2 \quad \Rightarrow \quad \boxed{a = 0.4}$ (Combining like terms and dividing both sides by 8.)

   (e) $\frac{1}{6}x - \frac{1}{3} = 1 \quad \Rightarrow \quad x - 2 = 6$ (Multiplying both sides by 6 to clear the fractions.)
   $\Rightarrow \quad \boxed{x = 8}$
   Note: You can do this one by adding $\frac{1}{3}$ to both sides and then dividing by $\frac{1}{6}$ as well.

   (f) $2m + 10 = 9 - 4m + 4 \quad \Rightarrow \quad 2m + 10 = 13 - 4m$
   Here's one way to do this problem, but there are others:
   Adding $4m$ to both sides: $\Rightarrow \quad 6m + 10 = 13$
   Subtracting 10 from both sides: $\Rightarrow \quad 6m = 3$
   Dividing both sides by 6: $\Rightarrow \quad \boxed{m = \frac{1}{2}}$