Math 70
Exam 2 Answers

1. (a) $-2a + 7b - 6a - b = \boxed{-8a + 6b}$

   (b) $11[4x^2 + 3x(x - 3)] = 11[4x^2 + 3x^2 - 9x]$
   $= \boxed{77x^2 - 99x}$

   (c) $3 - \frac{1}{4}(x - 8) = 3 - \frac{1}{4}x + 2$
   $= \boxed{5 - \frac{1}{4}x}$

2. Plugging in $x = -3$: $-5 + 2(-3)^2 - (-3) = -5 + 2(9) + 3$
   $= -5 + 18 + 3$
   $= \boxed{16}$

3. (a) $-4 + x = -5 + 10.2 \quad \Rightarrow \quad \boxed{x = 9.2}$ (Adding 4 to both sides)

   (b) $\frac{2}{5}y = 8 \quad \Rightarrow \quad \boxed{y = 20}$ (Multiplying both sides by $\frac{5}{2}$ or dividing both sides by $\frac{2}{5}$)

   (c) $-2x + 1 = 10x - 3 \quad \Rightarrow \quad \boxed{x = \frac{1}{3}}$ (Getting the variable terms on one side and constants on the other...)

   (d) $7(t + 3) + t = -11 \quad \Rightarrow \quad \boxed{t = -4}$ (Distribute the 7 first and simplify)

   (e) $\frac{x}{4} = 10 + \frac{x}{5} \quad \Rightarrow \quad 5x = 200 + 4x$ (Clearing fractions by multiplying all terms by 20.)
   $\Rightarrow \quad \boxed{x = 200}$
   (Note: You do not need to clear the fractions to solve this equation, but I think it makes it easier.)

4. $-16x + 8y = 24 \quad \Rightarrow \quad 8y = 24 + 16x$ (Adding $16x$ to both sides)
   $\Rightarrow \quad \boxed{y = 3 + 2x}$ (Dividing both sides (all terms) by 8)

5. Area of the square table = 5 ft(5 ft) = 25 square feet

   Area of the rectangular table = 4.5 ft(6 ft) = 27 square feet

   So, the rectangular table has more area by 2 square feet.

6. Using distance = rate(time), we have that $300 = r(4) \quad \Rightarrow \quad r = \frac{300}{4} = \boxed{75 \text{ miles per hour}}$

7. **Unknown:**
Number of miles $= x$

Equation: (Cost for car) + (Cost of miles) = 56

$$25 \quad + \quad 0.5x \quad = \quad 56$$

$$\Rightarrow \quad 0.5x = 31 \quad \Rightarrow \quad x = 62$$

Bob drove 62 miles.