

Math 70
Exam 2 Answers

1. (a) $-6a + 3b - 2a - b = \boxed{-8a + 2b}$

(b) $11[2x^2 + 3x(x - 3)] = 11[2x^2 + 3x^2 - 9x]$
 $= \boxed{55x^2 - 99x}$

(c) $m^3 \cdot m^5 = \boxed{m^8}$

2. (a) $-4 + x = -5 + 10 \Rightarrow \boxed{x = 9}$ (Adding 4 to both sides)

(b) $\frac{1}{4}y = 5 \Rightarrow \boxed{y = 20}$ (Multiplying both sides by 4 or dividing both sides by $\frac{1}{4}$)

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

(d) $6(x + 5) + x = 9 \Rightarrow \boxed{x = -3}$ (Distribute the 6 first and simplify)

(e) $\frac{x}{3} = 5 + \frac{x}{4} \Rightarrow 4x = 60 + 3x$ (Clearing fractions by multiplying by 12.)
 $\Rightarrow \boxed{x = 60}$

(Note: You do not need to clear the fractions to solve this equation, but I think it makes it easier.)

3. $-8x + 4y = 20 \Rightarrow 4y = 20 + 8x$ (Adding $8x$ to both sides)
 $\Rightarrow \boxed{y = 5 + 2x}$ (Dividing both sides by 4)

4. 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.

5. Distance in Traffic = 20 mph(1.5 hours) = 30 miles

So, you travel $180 - 30 = 150$ miles at a speed of 75 mph. \Rightarrow Time = $\frac{150 \text{ miles}}{75 \text{ mph}} = 2$ hours

You drive for 2 hours at 75 mph.

6. **Unknowns:**

$$\text{Ann's Payment} = 4B$$

$$\text{Betty's Payment} = B$$

$$\text{Charlie's Payment} = B + 400$$

Equation: $(\text{Ann's Payment}) + (\text{Betty's Payment}) + (\text{Charlie's Payment}) = 4000$

$$4B + B + B + 400 = 4000$$

$$\Rightarrow 6B + 400 = 4000 \quad \Rightarrow B = 600$$

Betty will pay \$600, Ann will pay \$2400, and Charlie will pay \$1000.