NAME: **Key** ☺

PART ONE: Solve the equations completely.

1. $2x + 5 - 6x = 21$

$$4x + 5 = 21$$
$$4x = 16$$
$$\boxed{x = 4}$$

2. $-33 = 3 + 12y - 3y - 3y$

$$-33 = 3 + 6y$$
$$-36 = 6y$$
$$\boxed{y = -6}$$

3. $17 - 4x = -8x - 7$

$$17 + 4x = -7$$
$$4x = -28$$
$$\boxed{x = -7}$$

4. $5(1 + 3x) = 2(5x + 15)$

$$5 + 15x = 10x + 30$$
$$5x = 25$$
$$\boxed{x = 5}$$

5. $-3 + 12f = 3(3 + 2f)$

$$-3 + 12f = 9 + 6f$$
$$-3 + 6f = 12$$
$$6f = 12$$
$$\boxed{f = 2}$$

6. $-4(n + 2) = 8 - 2n$

$$-4n - 8 = 8 - 2n$$
$$-2n = 16$$
$$\boxed{n = -8}$$

7. $-2(4y + 1) = -8y - 2$

$$-8y - 2 = -8y - 2$$
$$-2 = -2$$

$\mathbb{R}$ all real solutions

8. $3(5x + 2) = 15x$

$$15x + 6 = 15x$$
$$6 = 0$$
$$\emptyset$$

No solution

On a scale of 1-5 (One = Need to Study …. 5 = I can teach this stuff!!), how do you feel about solving equations?

| 1 | 2 | 3 | 4 | 5 |

PART TWO: Solve the following proportions.

9. $\dfrac{3}{5} = \dfrac{x}{35}$ ×7   ×7

$$\boxed{x=21}$$

10. $\dfrac{36}{y} = \dfrac{6}{11}$ ×6   ×6

$$\boxed{y=66}$$

11. $\dfrac{9}{7} = \dfrac{x}{2}$

$$18 = 7x$$
$$\boxed{x = \tfrac{18}{7}}$$

12. $\dfrac{2}{x} = \dfrac{10}{(x-4)}$

$$2(x-4) = 10x$$
$$2x - 8 = 10x$$
$$-8 = 8x$$
$$\boxed{x = -1}$$

13. $\dfrac{-5}{7} = \dfrac{-x}{2x-3}$

$$-5(2x-3) = -7x$$
$$-10x + 15 = -7x$$
$$15 = 3x$$
$$\boxed{x=5}$$

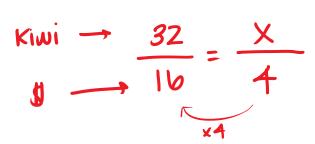**PART THREE:** Write the sentence as a proportion then solve.

14. 24 is to x as 16 is to 2.

$$\dfrac{24}{x} = \dfrac{16}{2} \qquad \boxed{x=3}$$

PART FOUR: Ratio Word Problem

15. Luke bought 32 kiwi fruit for $16. How many kiwi fruit can you buy if you only have $4?

Kiwi → $\dfrac{32}{16} = \dfrac{x}{4}$ ← $ ×4

$$\boxed{x = 8 \text{ Kiwi fruit}}$$

On a scale of 1-5 (One = I need to study …. 5 = I can teach this stuff!!), how do you feel about ratios and proportions?

| 1 | 2 | 3 | 4 | 5 |