Warm up

Solve the equation.

1. $10x = 100$

$\div 10 \quad \div 10$

$x = 10$

2. $18 = -2a$

$\frac{}{-2} \quad \frac{}{-2}$

$-9 = a$

$a = -9$

3. $\frac{z}{2} = -5$

$\cdot 2 \quad \cdot 2$

$z = -10$

4. $-\frac{1}{5}y = -6$

$\cdot \frac{-5}{1} \quad \cdot \frac{-5}{1}$

$y = 30$

Homework Questions?

44

$\frac{1}{3}y = 5$ $+2$ $\cdot 3$

$\frac{3}{1} \cdot \frac{1}{3}y = \frac{17}{3} \cdot \frac{3}{1}$

$y = 17$

38) $\frac{5}{4} \cdot 0 = \frac{4}{5} d \cdot \frac{5}{4}$

$d = 0$

36) $\frac{3}{1} \cdot \frac{1}{3} y = 82 \cdot \frac{3}{1}$

$y = 246$

32) $\frac{-10x}{-10} = \frac{-9}{-10}$

$x = \frac{9}{10}$

On the top of your paper (by your name) rate yourself for this section:

4 - I can summarize the concepts and explain it to others

3 - I can apply the concept to answer questions correctly

2 - I can apply the concepts but with some mistakes

1 - I need help and know how to apply the concept

0 - I can't apply the concept, even with help

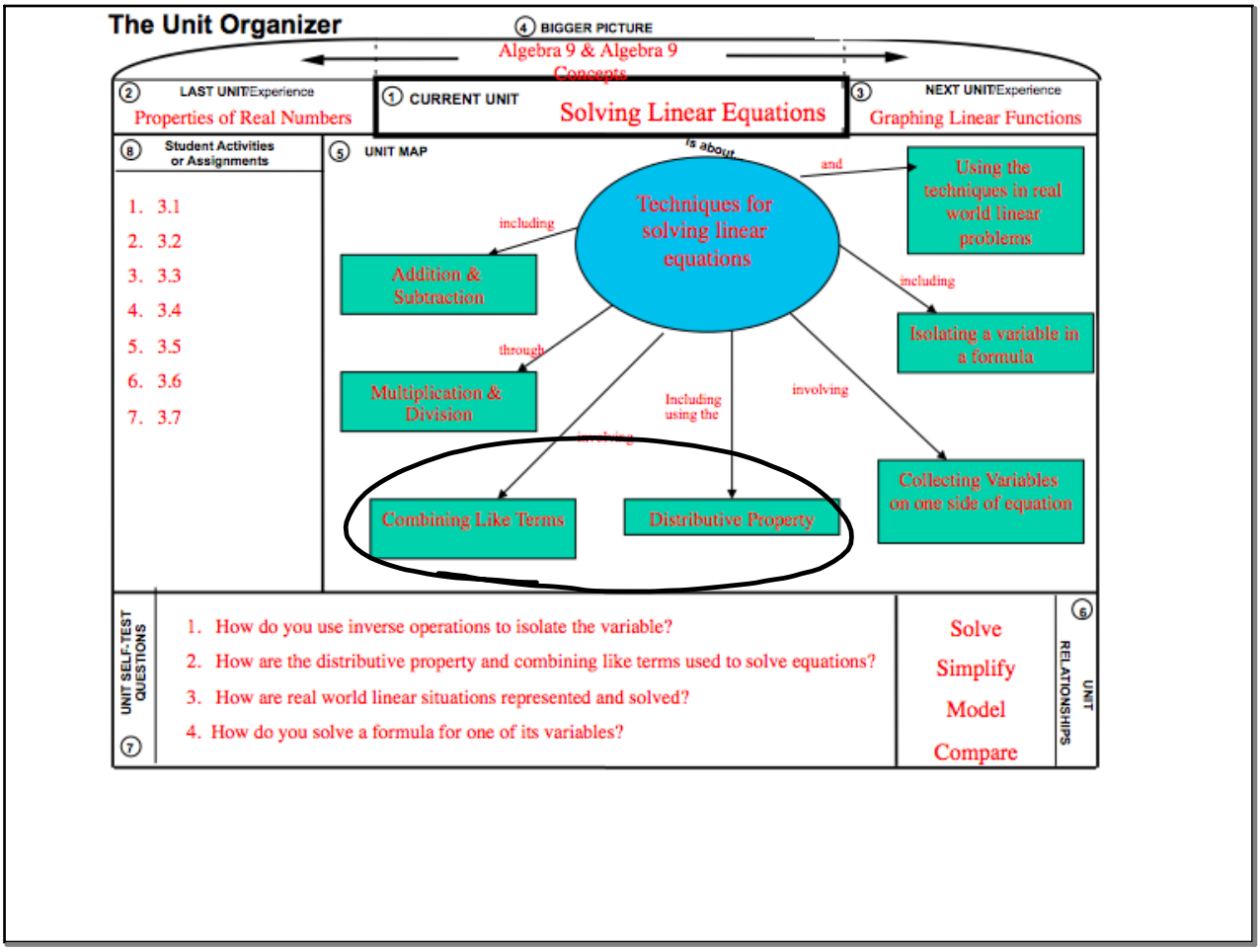
Rating of 0-2 is a warning signal to me that you need help

3.3 Solving Multi-Step Equations

Goals:

- Use two or more steps to solve a linear equation

EQ: How do you decide which operation to undo first?



Example 1: Solve a Linear Equation

a. $2x - 4 = -18$

$+4 \quad +4$

$\frac{2x}{2} = \frac{-14}{2}$

$x = -7$

b. $\frac{1}{2}x - 7 = -10$

$+7 \quad +7$

$\frac{2}{1}\cdot\frac{1}{2}x = -3\cdot\frac{2}{1}$

$x = -6$

1. ( ) Distribute
2. Combine Like Terms
3. + or −
4. ÷ by Number in front of x
   (*if fraction, mult. by recip.)

Example 2: Combine Like Terms First

c. $8x - 5x + 16 = -29$

$3x + 16 = -29$

$-16 \quad -16$

$\frac{3x}{3} = \frac{-45}{3}$

$x = -15$

d. $7x - 3x - 8 = 24$

$4x - 8 = 24$

$+8 \quad +8$

$\frac{4x}{4} = \frac{32}{4}$

$x = 8$

Try It

1. $2x - 5 = 9$

$+5 \quad +5$

$\frac{2x}{2} = \frac{14}{2}$

$x = 7$

2. $3 - 4a = 19$

$-3 \quad -3$

$\frac{-4a}{-4} = \frac{16}{-4}$

$a = -4$

3. $12m - 4m + 3 = -29$

$8m + 3 = -29$

$-3 \quad -3$

$\frac{8m}{8} = \frac{-32}{8}$

$m = -4$

4. $35 = 7y + 13y - 5$

$35 = 20y - 5$

$+5 \quad +5$

$\frac{40}{20} = \frac{20y}{20}$

$y = 2$

Example 3: Use the Distributive Property

e. $9x - 5(x + 6) = -14$

$9x - 5x - 30 = -14$

$4x - 30 = -14$

$+30 \quad +30$

$\frac{4x}{4} = \frac{16}{4}$

$x = 4$

f. $5x + 3(x + 4) = 28$

$5x + 3x + 12 = 28$

$8x + 12 = 28$

$-12 \quad -12$

$\frac{8x}{8} = \frac{16}{8}$

$x = 2$

Try It

5. $-2(3 - k) = 30$

$-6 + 2k = 30$

$+6 \quad +6$

$\frac{2k}{2} = \frac{36}{2}$

$k = 18$

6. $-38 = 4(n - 2) + 2n$

$-38 = 4n - 8 + 2n$

$-38 = 6n - 8$

$+8 \quad +8$

$\frac{-30}{6} = \frac{6n}{6}$

$n = -5$

7. $\frac{2}{5}(x + 23) = 8$

$\frac{2}{5}x + \frac{46}{5} = 8$

$-\frac{46}{5} \quad -\frac{46}{5}$

$\frac{2}{5}x = \frac{40}{5} - \frac{46}{5}$

$\frac{5}{2} \cdot \frac{2}{5}x = \frac{-6}{5} \cdot \frac{5}{2}$

$x = -3$

8. $12 = \frac{1}{3}(g + 2)$

$12 = \frac{1}{3}g + \frac{2}{3}$

$-\frac{2}{3} \quad -\frac{2}{3}$

$\frac{36}{3} - \frac{2}{3} = \frac{1}{3}g$

$\frac{3}{1} \cdot \frac{34}{3} = \frac{1}{3}g \cdot \frac{3}{1}$

$g = 34$

3.3 Summary

EQ: How do you decide which operation to undo first?

3.3 Homework

3-3 wkst