40

Notes:

Solving Multi-Step Equations

7.EE.3

Created for you by Ms. Nhotsoubanh

What are Multi-Step Equations?

Equations that require more than 2 steps.

Skills you need to solve multi-step equations:

- combine like terms
- applying the distributive property
- know your integers rules

Let's practice these skills before we begin:

Ex1. $3x - 1(x + 5)$

$3x - x - 5$

$2x - 5$

Ex2. $6 - 4(3x - 2)$

$6 - 12x + 8$

$-12x + 14$

Ex3. $2(4 - 3x) + 8x$

$8 - 6x + 8x$

$8 + 2x$

are you ready to solve multi-step equations?

Example 4: Solve for k:

$16 + 4(k - 5) = -28$

$16 + 4k - 20 = -28$

$4k - 4 = -28$

$+4 \quad +4$

$\frac{4k}{4} = \frac{-24}{4}$

$k = -6$

Steps:

1. Use the distributive property by multiplying twice to get rid of the parentheses
2. Combine like terms
3. Add 4 to both sides
4. Divide 4 to both sides

Name: Key

Math 7H - Oct. 10

Glue on page 40

Example 5: Solve for x.

$10x - 2(6x - 8) = 34$

$10x - 12x + 16 = 34$

$-2x + 16 = 34$

$-16 \quad -16$

$\frac{-2x}{-2} = \frac{18}{-2}$

$x = -9$

Steps:

1. Use the distributive property by multiplying twice to get rid of the parentheses.
2. Combine like terms
3. Subtract 16 from both sides.
4. Divide −2 to both sides.

Example 6: Solve for m.

$42 = 2(m + 5) - 6m$

$42 = 2m + 10 - 6m$

$42 = -4m + 10$

$-10 \quad -10$

$\frac{32}{-4} = \frac{-4m}{-4}$

$m = -8$

Steps:

1. Use the distributive property by multiplying twice to get rid of the parentheses.
2. Combine like terms
3. Subtract 10 from both sides.
4. Divide −4 to both sides.

Example 7: Solve for d.

$12 - 5(d + 3) = -18$

$12 - 5d - 15 = -18$

$-3 \quad -5d = -18 \quad +3$

$+3$

$\frac{-5d}{-5} = \frac{-15}{-5}$

$d = 3$

Steps:

1. Use the distributive property by multiplying twice to get rid of the parentheses.
2. Combine like terms
3. Add 3 to both sides.
4. Divide −5 to both sides.

Example 8: Solve for x.

$5x - (x - 7) + 12 = -3$

$5x - x + 7 + 12 = -3$

$4x + 19 = -3$

$-19 \quad -19$

$\frac{4x}{4} = \frac{-22}{4}$

$x = -5.5$

or

$x = -5\frac{1}{2}$

Steps:

1. Use the distributive property by multiplying twice to get rid of the parentheses.
2. Combine like terms
3. Subtract 19 from both sides.
4. Divide 4 to both sides.

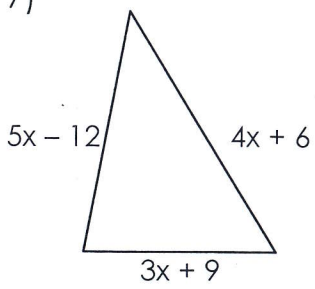
HOMEWORK

Directions: Solve for the equations. Show work on pages 41 & 42.

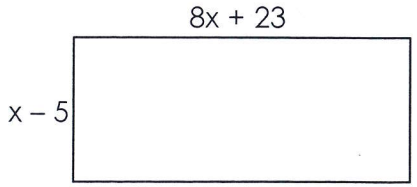
1) $-5(2w + 1) = 25$	4) $42 = -18t + 4(t + 5)$
2) $-40 - 3(2x + 5) = -61$	5) $-3(2d - 8) + 10d = 16$
3) $-5g - (8 - g) = 12$	6) $2m + 0.5(m - 4) = 9$

Directions: Find the perimeter of each shape.

7)



8)



***Perimeter is the distance around the shape.**