Solving Multi-Step Equations with Distribution

Agenda

Warm-Up

HW Check

Notes (p. 13&14)

HW (#1-10)

Reminders

HW 1.2 due TMR

Quiz TMR

Essential Question

What steps do I take to solve equations with parentheses?

Warm-Up (Thursday)

Have your HW out ready to check as you work on your warm-up.

1. **Distribute, Simplify, Combine Like Terms:**

$-1(d^2-5d)-2(d^2+3d)+12$

$-d^2+5d-2d^2-6d+12$

$-3d^2-1d+12$

2. **Evaluate if ~~a = -1~~, b = 2, and c = -3.**

$b-4c^2$

$2-4(-3)^2$

-34

Homework Check

Check your HW from last night. when you turn in your HW on friday will be graded on completion/spot checked for accuracy. If you only copy answers, you will NOT receive credit. Each table may ask ONE question we will go over as a class.

1. $x = 4$
2. $8 = x$
3. $n = 3$
4. $-6 = c$
5. $6 = n$
6. $x = -38$
7. 26 inches
8. $x = 7$, $\angle A = 70^\circ$ $\angle B = 58^\circ$ $\angle C = 52^\circ$
9. 9 miles

Algebra I - Unit 1: Topic 2 – Solving Multi-Step Equations

Practice - Solving Multi-Step Equations **pp 92-95**

Name_____ Date _____ Per_____

Solve each equation. Check your answers.

1. $5x+3=23$

2. $19=3x-5$

3. $4n+6n=30$

4. $7=\frac{c}{-3}+5$

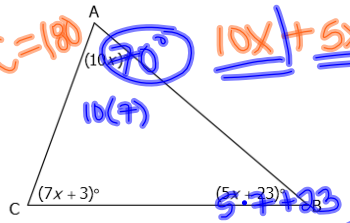
5. $4=3n-14$

6. $\frac{3+x}{7}=-5$

7. The average height of an emu is 60 inches. This 70 less than 5 times the average height of a kakapo. Write an equation and solve for the average height of a kakapo.

Solve each equation. Check your answers.

8. Use the diagram to set up an equation to solve for x. Then find the measures of all three angles.



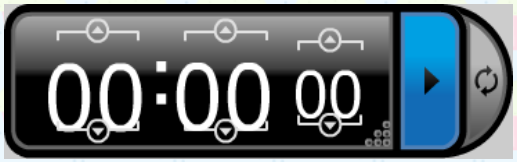
9. Steve is training for a marathon. He has run the following distances so far this week: 5 miles, 8.5 miles, 3.5 miles and 9 miles. He is going to run one more day this week. If Steve would like to average 7 miles for his training runs this week, how many miles should he run during his last run of the week?

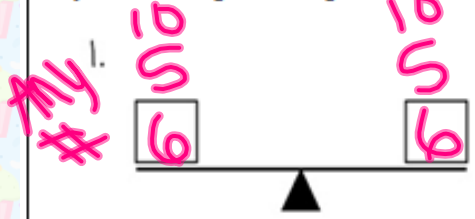
Solving Multi-Step Equations with Distribution

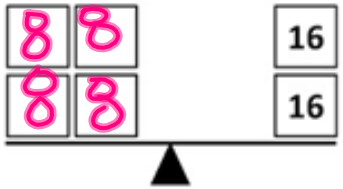
Glue the scales near the TOP of page 13.

Title the page "Types of Solutions"

These scales ~~are all currently balanced.~~ You must choose a number to fill into the boxes in each problem that will keep them balanced. Whatever number you choose for a problem, you may ONLY use that number.



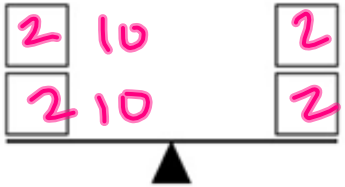
1. 

2. 

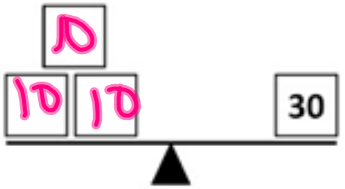
One #

3. 

NO #

4. 

Any #

5. 

One #

6. 

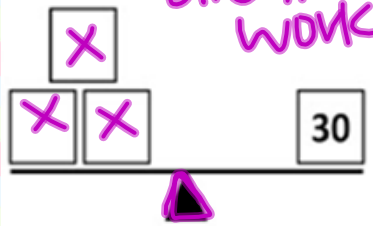
NO #

Types of Solutions

Fold the page into thirds. Glue on the bottom of page 13!

ONE SOLUTION

one # works



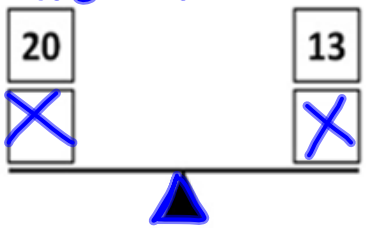
$\frac{3x}{3} = \frac{30}{3}$

$x = 10$

ONE POSSIBLE ANSWER

NO SOLUTIONS

no # works



$20 + x = 13 + x$

$-x \quad -x$

$20 \neq 13$

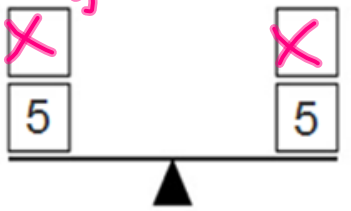
FALSE

All variables gone

scales never balanced

INFINITE SOLUTIONS

any # works



$x + 5 = x + 5$

$-x \quad -x$

$5 = 5$ ✓

TRUE

scales always balanced :)

Solving Multi-Step Equations with Distribution

PAGE 14

EQ: What steps do I take to solve equations with parentheses?

1. $2(4+3x)=-4$

$8+6x=-4$

$-8 \quad -8$

$6x=-12$

$x=-2$

2. $8=3+5(y-2)$

$8=3+5y-10$

$8=5y-7$

$+7 \quad +7$

$15=5y$

$3=y$

3. $7=4x-(2+x)$

$7=4x-2-x$

$7=3x-2$

$+2 \quad +2$

$9=3x$

$3=x$

4. $4=2(3n+1)-6n$

$4=6n+2-6n$

$4=2$ FALSE

no solution

5. $\frac{-4n-1}{3}=\frac{-1}{2}$

$\frac{3}{x}=\frac{6}{2}$

$2(-4n-1)=3(-1)$ cross-mult.!

$-8n-2=-3$

$+2 \quad +2$

$-8n=-1$

$\frac{-8n}{-8}=\frac{-1}{-8}$

$n=\frac{1}{8}$

6. $6x+2(1-3x)=2$

$6x+2-6x=2$

$2=2$ ✓

infinite sol'ns

Algebra I - Unit 1: Topic 2 – Solving Multi-Step Equations with Distribution

Practice - Solving Multi-Step Equations with Distribution **pp 92-97**

Name _____ Date _____ Per _____

Solve the following equations, then check your solution.

1. $4(x-5)=-8$

2. $3(2y+6)=12$

3. $5(3a-7)-9=46$

4. $4+6(x-3)=-38$

5. $\frac{3}{2}=\frac{12}{3y-1}$

6. $\frac{6x-2}{4}=\frac{5}{2}$

Draw a picture, set up an equation, and then solve.

7. The perimeter of a square is 68 feet. If each side is $(2x-1)$ feet, find x.

8. The length of a rectangle is 5 m greater than the width. The perimeter is 150 m. Find the width and length.

9. The width of a rectangle is 2 cm less than 7 times the length. The perimeter is 60 cm. Find the width and length.

10. Which equation below represents the second step of the solution process?

Step 1 $6-3(5x+2)-10x=50$
Step 2 [ ]
Step 3 $-25x=50$
Step 4 $x=-2$

A $6-15x+6-10x=50$
B $6-15x+2-10x=50$
C $6-15x-6-10x=50$
D $3(5x+2)-10x=50$