Unit 1: Linear Equations

Day 4: Equations with Brackets

Today we will...

- 1. Learn how to solve a linear equation that has variables on both sides of the equation.
- 2. Review expanding brackets.
- 3. Learn how to expand brackets to solve linear equations

Solving Equations with more than One Variable

Example 1: Solve the following:

a)
$$2x + 5 = 6 + x^{-7L}$$

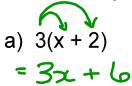
 $2x - x + 5 = 6$
 $x + 5 = 6$
 $x = 6 - 5$
 $x = 1$

b)
$$7 - 5x = 2x - 14$$

 $7 - 5x - 2x = -14$
 $7 - 7x = -14$
 $-7x = -14 - 7$
 $-7x = -14 - 7$
 $-7x = -21$
 $-7x = 3$

Solving Equations with Brackets

Review: Expand the following.



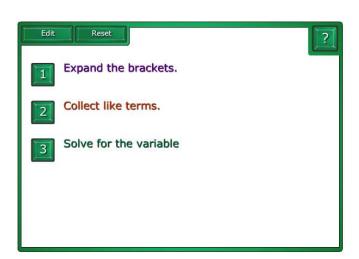
c)
$$-4(k-1)$$

= $-4k+4$

Example 1: Solve the following and check by substitution:

a)
$$2(x + 9) = 16$$

 $2x + 18 = 16 - 18$
 $2x = -2$
 $x = -1$



Check: L.S. R.S. If
$$LS=RS$$
, the $\chi=-1$ $=2(-1+9)$ Hue equation $=2(8)$ $=16$ Since $LS=RS$, $=16$

Example 2: Solve the following equations.

a)
$$4(k-3) = 6 - 1(2k-6)$$

 $4k-12 = 6 - 2k+6$
 $4k-12 = -2k+12$
 $4k+2k-12 = 12$
 $6k-12=12+12$
 $6k=12+12$
 $6k=24$
 $6k=24$
 $6k=4$

b)
$$2(x+7)=4$$

 $2x+14=4$
 $2x=4-14$
 $2x=-10$

c)
$$3(2x-1)-2(x+1)=5$$

 $6x-3-2x-2=5$
 $6x-2x-3-2=5$
 $4x-5\stackrel{?}{=}5^{-1}$
 $4x-5+5$
 $4x=\frac{10}{4}=\frac{5}{4}=3=2.5$

Step 1: Eliminate the brackets

Practice Work
Pages 169 - 170
#2a)d) and check, # 4 (check not required)