Consider this equation:

$$2x + y = 31z + 2a$$

- How is the equation like a <u>balance</u>
- What does that mean to you mathematically?

- equal on both sides
- one operation on each side
- we don't know the "real" value of either side
- anything we do to one side has to be done to the other in order to "keep the balance"

→ Starting today: New material (no more review)

→ You need to retake and pass skills test #1 before the end of 1st quarter (10/28)
- the sooner the better!
- you will need to schedule time with me

→ Course syllabus on my web site - print it, sign it, give to parents/guardians to sign, returned by Fri. 9/26

x $2x = y + 3$

Algebra - using variables and variable expressions to help and/or simplify problem solving

When you have an equation, it will remain balanced if you add or subtract the same number from both sides of the equation

1. If the side of the equation that has the variable has a number added or subtracted, add or subtract the opposite of that number
2. If the side of the equation that has the variable has a number multiplying or dividing the variable:
   - divide both sides of the equation by numbers that are multiplying the variable
   - multiply both sides of the equation by numbers that are dividing the variable
   - If there is a fraction multiplying the variable, multiply both sides of the equation by the reciprocal of that fraction

· If the equation has both a coefficient for the variable <u>and</u> addition or subtraction, do step 1 1st, and step 2 2nd.

4. $y + 5 = -13$

$+^{-}5 \quad +^{-}5$

$y = -18$

5. $a - 17 = -10$

6. $41 = 52 + m$

7. $c - 2.4 = 1.8$

8. $z + 4.1 = 9.6$

$+^{-}4.1 \quad +^{-}4.1$

$z = 5.5$

9. $-3.2 = 4.5 + p$

$+^{-}4.5 \quad +^{-}4.5$

$-7.7 = p$

13. $-52 = -4y$

$\frac{-52}{-4} = \frac{-4y}{-4}$

$13 = y$

14. $\frac{1}{3}n = 36$ · 3

$n = 108$

15. $-\frac{3}{4}a = \frac{12}{1}$ · $\frac{-4}{3} = \frac{-48}{3}$

$a = -16$

16. $0.5y = 17$

$\frac{0.5y}{0.5} = \frac{17}{0.5}$

$y = 34$

17. $-1.4a = 2.8$

$\frac{-1.4a}{-1.4} = \frac{2.8}{-1.4}$

$a = -2$

18. $-6.5 = -1.3m$

$\frac{-6.5}{-1.3} = \frac{-1.3m}{-1.3}$

$5 = m$

1. $3n + 14 = 35$

$-14 \quad -14$

$\frac{3n}{3} = \frac{21}{3}$

$n = 7$

2. $7y - 10 = 11$

$+10 \quad +10$

$\frac{7y}{7} = \frac{21}{7}$

$y = 3$

3. $14 = 9 - x$

$-9 \quad -9$

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

$-5 = x$

4. $9c - 5 = 13$

$+5 \quad +5$

$\frac{9c}{9} = \frac{18}{9}$

$c = 2$

5. $4.6 = 4m - 3.4$

$+3.4 \quad +3.4$

$\frac{8}{4} = \frac{4m}{4}$

$m = 2$

6. $1.2 = 2.4 - 3l$

Homework:

p. 138, 18-48 (every 3rd), 54

p. 144, 3-33 (every 3rd), 38-44 (even)