Name:_____  Date:_____

Notes
Algebra Section 3.1
Pages 134-140

Goal: "You will solve one-step equations"

Vocabulary:

Inverse Operations: Two operations that undo each other.

Examples: multiplication and division

addition and subtraction

square roots and squaring

Key Concepts:

To solve an equation you must isolate the variable.

Whatever you do to one side of the equation you must do to the other side.

You must show all your work !!!

Addition and Subtraction:

Examples:

$x + 8 = 11$
$-8 \quad -8$
$x = 3$

check

$x - 10 = 15$
$+10 \quad +10$
$x = 25$

check

Try These:

Ex: $x + 7 = 4$
$x = -3$

Ex: $x - 12 = 3$
x=15

Ex: $x - 19 = 5$
x=24

Ex: $x + 4 = 15$
x=11

Ex: $x + 5 = -4$
$x = -9$

Ex: $x - 12 = -3$
x=9

Ex: $12 + x = -15$
$x = -27$

Ex: $x - 10 = -45$
$x = -35$

Ex: $x + \frac{4}{5} = -9$
$x = -9\frac{4}{5}$

Ex: $x - 2\frac{1}{2} = -12$
$x = -9\frac{1}{2}$

Ex: $1\frac{1}{3} + x = -1$
$x = -2\frac{1}{3}$

Ex: $x - 11\frac{2}{3} = -4$
$x = 7\frac{2}{3}$

Ex: $x + 2.7 = -6.4$
$x = -9.1$

Ex: $x - 3.9 = -2.2$
x=1.7

Ex: $1.2 + x = -15.8$
$x = -17$

Ex: $x - 3.8 = -16$
$x = -12.2$

Multiplication and Division:

Examples:

$3x = 18$ $\quad x = 6$

$\frac{x}{8} = 10$ $\quad x = 80$

$\frac{3}{5}x = 9$ $\quad x = 15$

$-x = 3$ $\quad x = -3$

Try These:

Ex: $-6x = 48$ $\quad x = -8$

Ex: $\frac{x}{-4} = -7$ $\quad x = 28$

Ex: $-\frac{2}{7}x = 4$ $\quad x = -14$

Ex: $\frac{5}{6}w = 10$ $\quad x = 12$

Ex: $\frac{2}{3}p = 14$ $\quad x = 21$

Ex: $9 = -\frac{3}{4}n$ $\quad x = -12$

Ex: $-8 = -\frac{4}{5}v$ $\quad x = 10$

Ex: $9x = 3$ $\quad x = \frac{1}{3}$

Ex: $-8 = 2.5v$ $\quad x = -3.2$

Word Problems: (Write an equation and then solve)

Ex: In the 2004 Olympics, Shawn Crawford won the 200 meter dash. His winning time was 19.79 seconds. Find his average speed to the nearest tenth of a meter per second.

$d = rt$
$200 = r(19.79)$
$r = 10.1$ m/s

Ex: What if Crawford ran the 100 meter dash at the same speed as the 200? How long would it take him to run it?

$d = rt$
$100 = 10.1t$
$t = 9.9$ second

Ex: In the 2004 Olympics, Inge de Brujin won the 50-meter freestyle with a time of 24.58 seconds. What was her average speed?

$d = rt$
$50 = r(24.58)$
$r = 2.03$ m/s