

Algebra 1 2/29/2012

Chapter 3-7: Absolute Value Equations and Inequalities

★ Absolute Value is the distance from zero!

$$|x| + 9 = 2$$

$$\underline{-9 \quad -9}$$

$|x| = -7$ N.S. ★ absolute value cannot be negative

$$|x| + 7 = 9$$

$$\underline{-2 \quad -2}$$

$$|x| = 7$$

$$x = 7$$

★ Distance of x from zero is 7.

• Abs. value has 2 solutions

$$|-7| = 7 \quad |7| = 7$$

$$x = -7 \text{ or } 7$$

9. $|b| = \frac{1}{2}$

$$|b| = \frac{1}{2}$$

10. $4 = |y|$

11. $|n| + 3 = 7$

$$\underline{-3 \quad -3}$$

$$|n| = 4$$

13. $|x| - 10 = -2$

$$\underline{+10 \quad +10}$$

$$|x| = 8$$

$$x = -8 \text{ or } 8$$

15. $-3|m| = 20$

$$\underline{-3 \quad -3}$$

$$|m| = \frac{20}{-3}$$

$$|3| = 3$$

$$|-3| = 3$$

$$|c+4| = 6$$

$$c+4 = 6 \text{ or } -(c+4) = 6$$

$$\underline{-4 \quad -4}$$

$$c = 2$$

$$c+4 = -6$$

$$\underline{-4 \quad -4}$$

$$c = -10$$

20. $3 = |m+2|$

$$\underline{-2 \quad -2}$$

$$1 = |m|$$

or

$$m+2 = -3$$

$$\underline{-2 \quad -2}$$

$$m = -5$$

$$|c+4| = 6$$

$$|2+4| = 6$$

$$|6| = 6$$

$$|c+4| = 6$$

$$|-10+4| = 6$$

$$|-6| = 6$$

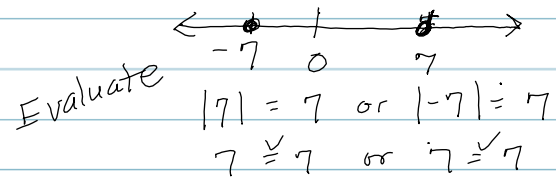
$$|m+2|=3 \quad |m+2|=3$$

$$|1+2|=3 \quad |-5+2|=3$$

$$|3|=3 \quad \text{or} \quad |-3|=3$$

1. $|x|=5$
 $x=5$
 $5 \cong 5$

2. $|n|=7=4$
 $+3 \quad -3$
 $|n|=7$
 $n = -7 \text{ or } 7$



3. $|2t|=6$
 $\frac{2t}{2}=6 \text{ or } \frac{2t}{2}=-6$
 ~~$t=6 \text{ or } t=6$~~
 $t=3 \text{ or } t=-3$

