

Warm Up

Do your warmups on a separate sheet of paper. **DO NOT** do your warmup in your notebook.

Solve $4 + 9(x - 15)$ when $x = 3$

$$4 + 9(3 - 15)$$

$$4 + 9(-12)$$

$$4 + -108$$

$$\textcircled{-104}$$

Translate into Algebra:

a. four times the sum of a number and seven.

$$4(x + 7)$$

b. eight less than the product of six and a number

$$6x - 8$$

Absolute Value and Square Roots

Understanding Absolute Value



1. How far away is the house from the movie theater?
2. How far away is the house from the church?

Absolute Value - The distance from zero on a number line

$$|-5|$$

How far away is -5 from zero? 5 Therefore. $|-5| = 5$

Examples:

$$|9| = 9$$

$$|-4| = 4$$

$$|17 + -20|$$

$$|-3| = 3$$

$$|17| + |-20|$$

$$17 + 20 = 37$$

$$|-16 + 5| + 4$$

$$|-11| + 4$$

$$11 + 4 = 15$$

$$-2|-17 - 9|$$

$$-2|-26|$$

$$-2 * 26 = -52$$

Evaluating Absolute Value

$$3|h - 19| \text{ when } h = 11$$

$$3|11 - 19|$$

$$3|-8|$$

$$3 \cdot 8$$

$$24$$

$$-2 + |-3x - 22| \cdot -4 \text{ when } x = 5$$

$$-2 + |-3 \cdot 5 - 22| \cdot -4$$

$$-2 + |-15 - 22| \cdot -4$$

$$-2 + |-37| \cdot -4$$

$$-2 + 37 \cdot -4$$

$$-2 + -148$$

$$\underline{-150}$$

$$-7|2y^2| - 8 \text{ when } y = -3$$

$$-7|2 \cdot (-3)^2| - 8$$

$$-7|2 \cdot 9| - 8$$

$$-7 \cdot 18 - 8$$

$$-126 - 8$$

$$\underline{-134}$$

To find the square root of a number: find what number is multiplied by itself to get that number.

$$\sqrt{4} = 2$$

$$\sqrt{9} = 3$$

$$\sqrt{25} = 5$$

$$\sqrt{1} = 1$$

$$\sqrt{64} = 8$$

Evaluate the following:

$$3\sqrt{7x+4}$$

when $x = 3$

$$3\sqrt{7 \cdot 3 + 4}$$

$$3\sqrt{21 + 4}$$

$$3\sqrt{25}$$

$$3 \cdot 5$$

$$\textcircled{15}$$

$$3 + 2\sqrt{8x + 9}$$

when $x = 9$

$$3 + 2\sqrt{8 \cdot 9 + 9}$$

$$3 + 2\sqrt{72 + 9}$$

$$3 + 2\sqrt{81}$$

$$3 + 2 \cdot 9$$

$$3 + 18$$

$$\textcircled{21}$$

