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|--------|--------|
| Name:  | Date:  |
| Topic: | Class: |

| Main Ideas/Questions                              | Notes  |
|---|--|
| <b>WARM-UP</b>                                    | <p>1. If <math> x  = 7</math>, what are the possible values of <math>x</math>?</p> <p>2. If <math> x  = -4</math>, what are the possible values of <math>x</math>?</p> |
| <b>STEPS TO SOLVE</b><br>Absolute Value Equations | ① <b>ISOLATE</b> the absolute value expression.  |
|   | ② <b>CREATE TWO CASES.</b> Set the "inside" equal to both the positive and negative value of the number on the opposite side of the equal sign.                        |
|   | ③ <b>SOLVE</b> both equations.   |
|   | ④ <b>CHECK</b> for extraneous solutions.   |
| What are Extraneous Solutions?                    |  |

**Directions:** Solve each equation. Be sure to check for extraneous solutions.

|                        |                               |
|------------------------|-------------------------------|
| 3. $ x - 9  = 5$       | 4. $3 =  2k + 7 $             |
| 5. $ y - 1  + 17 = 23$ | 6. $3 m + 8  = 39$            |
| 7. $16 r - 5  = -32$   | 8. $\frac{ y - 10 }{-2} = -6$ |

**9.**  $-5 = |8 - p| - 11$

**10.**  $\frac{|3a + 12|}{9} = 0$

**11.**  $9 - 4|c + 10| = -15$

**12.**  $-16 = -12\left|\frac{k}{5}\right| + 8$

**13.**  $|3x - 9| = x + 1$

**14.**  $2|h + 8| = 14h$

**15.**  $|8 - 2n| - 5n = n + 2$

**16.**  $-4w - 2 = |6w + 20|$