Algebra 1: 12.6 Notes & Practice – Day 2 **Name _____ Period ___**
Approximating and Rewriting Radicals

<table>
<tr><th>Main Ideas/Questions</th><th colspan="3">Notes/Examples</th></tr>
<tr><td rowspan="2">WARM UP</td><td colspan="3">Directions: Rewrite each radical by extracting the perfect squares.</td></tr>
<tr><td>1. $\sqrt{169}$</td><td>2. $\sqrt{\frac{1}{25}}$</td><td>3. $\sqrt{-49}$</td></tr>
<tr><td>REWRITING RADICALS with VARIABLES</td><td colspan="3">You can simplify radical expressions that contain variables.
• A variable with an even (2, 4, 6…) exponent is a perfect square.
• A variable with an odd (1, 3, 5…) exponent is the product of a perfect square and a variable.</td></tr>
<tr><td rowspan="2">EXAMPLES</td><td colspan="3">Directions: Simplify each radical expression.</td></tr>
<tr><td>1. $\sqrt{45a}$</td><td>2. $\sqrt{27n^3}$</td><td>3. $\sqrt{\frac{25}{b^2}}$</td></tr>
<tr><td>SOLVING RADICAL EQUATIONS</td><td colspan="3">Sometimes, you can solve a quadratic equation by taking the square root of each side.</td></tr>
<tr><td rowspan="3">EXAMPLES</td><td colspan="3">Directions: Solve each quadratic equation by taking the square root of each side.</td></tr>
<tr><td>1. $x^2 = 40$</td><td>2. $x^2 = 75$</td><td>3. $x^2 - 4 = 23$</td></tr>
<tr><td colspan="2">4. $(x-1)^2 = 17$</td><td>5. $(x+8)^2 = 81$</td></tr>
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