Intermediate Algebra B Name Key

Reteach 7.3: Roots, Radicals & Equations Hour 1 2 3 4 5

7.3 I can solve equations with radical expressions and expressions with rational exponents.

Level 1:

Solve and check your solutions.

1. $5 = -3x^{\frac{1}{3}} - 1$

$x = -8$

$5 = -3x^{\frac{1}{3}} - 1$ $(-2)^3 = (x^{\frac{1}{3}})^3$

$+1 \quad +1$ $-8 = x$

$\frac{6}{-3} = \frac{-3x^{\frac{1}{3}}}{-3}$

2. $\left(\sqrt[3]{2x+1}\right)^3 = \left(\sqrt[3]{5x+7}\right)^3$

$2x+1 = 5x+7$

$-2x \quad -2x$

$1 = 3x + 7$

$-7 \quad -7$

$-6 = 3x$

$-2 = x$

3. $\frac{81}{-3} = \frac{-3(2x-1)^{\frac{3}{4}}}{-3}$

$(-27)^{\frac{4}{3}} = \left((2x-1)^{\frac{3}{4}}\right)^{\frac{4}{3}}$

~~$-81 = 2x - 1$~~ $81 = 2x - 1$

~~$-80 = 2x$~~ $82 = 2x$

~~$-40 = x$~~ $41 = x$

no solution

4. $\sqrt{3x-5} + 7 = 2$

$-7 \quad -7$

$\left(\sqrt{3x-5}\right)^2 = (-5)^2$

$3x - 5 = 25$

$+5 \quad +5$

$\frac{3x}{3} = \frac{30}{3}$

$x = 10$

no solution

5. $-2 = -6 + (3a-7)^{\frac{2}{3}}$

-33

5

Intermediate Algebra B *Name* _____

Reteach 7.3: Roots, Radicals & Equations *Hour 1 2 3 4 5*

7.3 I can solve equations with radical expressions and expressions with rational exponents.

Level 2/3:

4. Solve and check your solutions.

$\sqrt{2x+7} = x+2$

$2x+7 = (x+2)^2$

$2x+7 = (x+2)(x+2)$

$2x+7 = x^2+4x+4$

$0 = x^2+2x-3$

$0 = (x+3)(x-1)$

$x=-3$ $x=1$

4. $x=1$

5. Explain the two methods that you could use to tell if $x = 1$ a solution to the equation $\sqrt{2x-1}+5 = 4$?

Graph + plug in into the equation

6. Solve $x-3 = \sqrt{4x}$

$(x-3)^2 = (\sqrt{4x})^2$

$x^2-6x+9 = 4x$

$x^2-10x+9 = 0$

$(x-9)(x-1) = 0$

$x=9$ $x=1$

Is either solution extraneous?

Explain: Yeah $x=1$ $1-3 = \sqrt{4(1)}$

$-2 = \sqrt{4}$

$-2 \neq 2$