Intermediate Algebra B
7.2, 7.3 Review

Name Key

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

Level 1:

Solve and check your solutions.

1. $14 = -3x^{\frac{1}{3}} + 2$

$-2 \quad -2$

$\frac{12}{-3} = \frac{-3x^{\frac{1}{3}}}{-3}$

$(-4)^3 = (x^{\frac{1}{3}})^3$ $\quad x = -64$

2. $\left(\sqrt[3]{4x-1}\right)^3 = \left(\sqrt[3]{2x+7}\right)^3$

$4x - 1 = 2x + 7$

$2x - 1 = 7$

$\frac{2x}{2} = \frac{8}{2}$ $\quad \boxed{x = 4}$

3. $\frac{8}{-2} = \frac{-2(5x+1)^{\frac{1}{3}}}{-2}$

$(-4)^3 = \left((5x+1)^{\frac{1}{3}}\right)^3$

$-64 = 5x + 1$

$-1 \quad -1$

$\frac{-65}{5} = \frac{5x}{5}$ $\quad \boxed{x = -13}$

4. $\sqrt{2x-4} + 6 = 2$

$-6 \quad -6$

$\sqrt{2x-4} = -4$

no solution

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

$+6 \quad +6$

$(4)^{\frac{3}{2}} = \left((3a-7)^{\frac{2}{3}}\right)^{\frac{3}{2}}$

$8 = 3a - 7$

$+7 \quad +7$

$\frac{15}{3} = \frac{3a}{3}$ $\quad \boxed{a = 5}$

$-8 = 3a - 7$

$+7 \quad +7$

$\frac{-1}{3} = \frac{3a}{3}$ $\quad \boxed{a = -\frac{1}{3}}$

Level 2/3:

4. Solve and check your solutions.

$\left(\sqrt{5x-9}\right)^2 = (x-1)^2$

$5x - 9 = (x-1)^2$

$5x - 9 = (x-1)(x-1)$

$5x - 9 = x^2 - 2x + 1$

$= x^2 - 7x + 10$

$= (x-5)(x-2)$

4. $x = 5 \quad x = 2$

5. Explain the two methods that you could use to tell if $x = 14$ a solution to the equation $\sqrt{x+2}+8=6$?

$-8 \quad -8$

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

$x+2 = 4$

$x = 2$

Graphing

6. Solve $x-1=\sqrt{5x-9}$

~~Algebra~~ #4

Graphically checked

Is either solution extraneous? answers and both work

Explain: No extraneous solutions.