

### HONORS Rational Exponents Quiz Review – Do All Work on Separate Paper!

**Part 1 – Non Calculator:** Fully simplify each expression using the properties of exponents. Your answers should contain no negative exponents and no fractional exponents.

1)  $27^{\frac{1}{3}}$       2)  $\left(32^{\frac{1}{5}}\right)^5$       3)  $7^0$       4)  $(-1)^{\frac{1}{5}}$       5)  $16^{\frac{1}{4}}$       6)  $2y^{\frac{1}{2}} \cdot y$       7)  $\left(\frac{27}{8}\right)^{\frac{2}{3}}$

8)  $\left(3x^{\frac{1}{2}}\right)\left(4x^{\frac{2}{3}}\right)$       9)  $\left(3a^{\frac{1}{2}}b^{\frac{1}{3}}\right)^2$       10)  $\frac{x^{\frac{4}{7}}}{x^{\frac{2}{3}}}$       11)  $(9x^4y^{-2})^{\frac{1}{2}}$       12)  $x^{\frac{1}{2}} \cdot x^{\frac{1}{3}}$

26)  $\frac{2x^4y^{-4}z^{-3}}{3x^2y^{-3}z^4}$       28)  $\frac{2h^3j^{-3}k^4}{3jk}$       30)  $\frac{3x^3y^{-1}z^{-1}}{x^{-4}y^0z^0}$

16)  $(27x^9)^{\frac{1}{3}}$       17)  $(32y^{15})^{\frac{1}{5}}$       18)  $(25b^6)^{\frac{3}{2}}$       19)  $(64m^6)^{\frac{2}{3}}$

**Part 2 – Calculator:** Solve the radical equations. CHECK FOR EXTRANEIOUS SOLUTIONS.

1)  $\sqrt{3x} = 6$       2)  $\sqrt{4x} - 8 = -2$       3)  $\sqrt{7x-6} = \sqrt{5x+2}$

4)  $x = \sqrt{30-x}$       5)  $\sqrt{2v-7} = v-3$       6)  $n-5 = \sqrt{21-6n}$

7)  $(7x-3)^{\frac{1}{2}} = 5$       8)  $(x-2)^{\frac{1}{3}} = 5$       9)  $3(x-1)^{\frac{2}{3}} = 147$

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