Name: Selected Answers Date: _____

Homework: Unit 1 – Foundations **Honors PreCalculus**

All homework must be completed NEATLY on your own paper.

Homework 1.8: Rational Exponents

Simplify the expression and eliminate any negative exponents. Assume all variables are positive. Leave your answers in exponential form.

1. $x^{2/3}x^{1/5}$

$x^{13/15}$

2. $(4x^6y^8)^{3/2}$

$8x^9y^{12}$

3. $\left(\frac{x^3y^4z^5}{x^{-3}y^{-4}z^{-5}}\right)^{-3/5}$

$\frac{1}{x^{\frac{18}{5}}y^{\frac{24}{5}}z^6}$

4. $\left(\frac{3a^{-2}}{4b^{-1/3}}\right)^{-1}$

$\frac{4a^2}{3b^{1/3}}$

5. $(49x^{-2}y^4)^{-\frac{1}{2}}\left(xy^{\frac{1}{2}}\right)$

$\frac{x^2}{7y^{3/2}}$

6. $\left(\frac{x^{-\frac{5}{4}}y^{\frac{1}{3}}}{x^{-\frac{3}{4}}}\right)^{-6}$

$\frac{x^3}{y^2}$

7. $\frac{b^{6n+7}b^{n-8}}{b^{5n-6}}$

b^{2n+5}

8. $\frac{(2^{-1}x^{-3}y^{-1})^{-2}(2x^{-6}y^4)^{-2}(9x^3y^{-3})^0}{(2x^{-4}y^{-6})^{-2}}$

$\frac{4x^{10}}{y^{18}}$

Factor the following expressions completely.

9. $x^{3/2} + 4x^{1/2} + 3x^{-1/2}$

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

10. $x^6 - 8y^3$

$(x^2-2y)(x^4+2x^2y+4y^2)$

11. $5(x^2+4)^4(2x)(x-2)^4 + (x^2+4)^5(4)(x-2)^3$

$2(x^2+4)^4(x-2)^3[7x^2-10x+8]$