## Occidental College Department of Mathematics Gateway – Exponents (practice)

Course: \_\_\_\_\_ Date: \_\_\_\_\_ Name: \_\_\_\_\_

Show all of your work on this (or additional) sheets.

1. Simplify:  $x^{-9}x^5$ 

2. Simplify:  $(x^{-3})^3$ 

3. Simplify:  $(x^3x^5)^{-2}$ 

4. Simplify:  $(x^2y)^3(x^{-1}y^3)$ 

5. Simplify: 
$$\left(\frac{64}{4}\right)^{1/2}$$



7. Simplify the following and get rid of all negative exponents:  $\frac{xz^{-3}}{xy^{-2}z^{-5}}$ 

8. Simplify the following and get rid of all negative exponents:  $\left(\frac{x^2y^3}{x^{-3}y^5}\right)^{-4}$ 

9. Solve for  $x: 4^{3x} = 16$ 

10. Solve for x:  $2 = 18 - 4^{x+1}$