

Course Number \_\_\_\_\_  
Section \_\_\_\_\_

NAME \_\_\_\_\_

**Directions: Simplify each of the following expressions. Your final answer should not contain any negative exponents. Note: Some problems may have additional directions.**

1.  $\frac{(a+2)^m}{(a+2)^{3-m}}$

2.  $\frac{4k^2 - 11k - 3}{36k - 4k^3}$

3.  $\frac{(4+h)^3 - 64}{h}$

4.  $\frac{(p+5)^3 - 8p(p+5)^2}{(p+5)^6}$

5. Write as a single fraction:  $Az^{-2} + Bz^{-3}$

$$6. \frac{\frac{3}{x+h} - \frac{3}{x-h}}{2h}$$

$$7. \frac{4y^{-1}}{3y^{-2} + 5}$$

$$8. \frac{7x(x-2)^{-\frac{1}{4}} + 5(x-2)^{\frac{3}{4}}}{(x-2)^3}$$

9. Rationalize the denominator:  $\frac{z-8}{\sqrt{z+3}-\sqrt{11}}$