

## Mathematics 101 Worksheet 1.8, 2.1, 2.2

### Problems

1) Simplify the expression and write the answer with positive exponents.

a)  $(-6x^4)(3x^2)$

b)  $\frac{24x^5y^3}{-8x^4y}$

c)  $(-2a^2b^{-5})^{-3}$

2) Write the numbers in scientific notation.

a) The population of Asia is 3,686,600,000 in 2000.

b) A nanometer is 0.000001 of a millimeter.

3) For the following, find the x-intercept, the y-intercept, the slope, and graph the equation.

a)  $2x - 3y = -6$

b)  $5x - 2y = 0$

c)  $y = 6$

d)  $x = 2$

4) Find the slope of the line that passes through  $(7, 2)$  and  $(-3, -5)$ .

5) The slopes of two lines are given. Based on the slopes, are the lines parallel, perpendicular, or neither?

a)  $m_1 = \frac{-1}{3}$ ,  $m_2 = 3$

b)  $m_1 = \frac{5}{4}$ ,  $m_2 = \frac{4}{5}$

c)  $m_1 = \frac{1}{2}$ ,  $m_2 = \frac{1}{2}$