

Name: \_\_\_\_\_

**Math 80 Worksheet #3**  
**February 9, 2007**

1. Linear Equations:

- (a) Find an equation of a line with slope 4 that goes through the point (3, 2).
  
- (b) Find an equation of a line perpendicular to the line in part (a) that intersects the  $y$ -axis when  $y = 5$ .
  
- (c) Graph both lines on the same set of axes.

2. Exponential Expressions and Scientific Notation:

- (a) Simplify and write the following with positive exponents only.
  - i.  $(-3)^{-2}$
  
  - ii.  $(-8)^0 - 8^0$
  
  - iii.  $\frac{x^{-2}(5-3x)^6}{(5-3x)^3}$
  
  - iv.  $\frac{(3p^{-4}q^3)^2}{(5p^2q^{-5})^{-3}}$

3. Jupiter's average distance from the sun is approximately  $7.8 \times 10^8$  kilometers and the speed of light is approximately  $3.0 \times 10^5$  kilometers per second. Approximately how many seconds does it take for sunlight to reach Jupiter's surface?

4. Simplify and write the following in scientific notation:  $(2 \times 10^{-4}) \cdot (8 \times 10^6)$