Name:

Quiz 1: §A.2-A.4

Complete the following problems to the best of your ability. **SHOW ALL OF YOUR WORK.** Unshown work will not be graded. You may use a calculator.

1. [30 points] Rewrite each of the following sets in interval notation and sketch them on the real number line.

a) $\{x|x \leq 2\}$

b) $\{x|x \geq -2\}$

c) $\{x| -1 < x < 2\}$

2. [10 points] Define the sets $A = (-\infty, 2)$ and $B = (-4, 4]$. Find the following sets (in interval notation).

a) $A \cup B$

b) $A \cap B$

3. [60 points] Simplify the following expressions (i.e. no negative exponents, no radicals).

a) $x^2 x^{-4}$

b) $\frac{y^2}{\sqrt{y}}$

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

d) $\frac{x^2 z^{-1}}{x^3 \sqrt[3]{(y)}}$

e) $\left(\frac{2x^2 y^{-3}}{xyz^2}\right)^{-3}$