Assignment #1 **Name** _____

Due 4 September 2009

1. Solve the following inequalities. In each case, express your answer in proper set notation.

   (a) $|x+1| \geq 3$

   (b) $x^2 + x - 20 < 0$

   (c) $\dfrac{4}{x+1} \leq 1$

2. (a) Rewrite each of the sentences "The distance from x to 1 is strictly less than .01" and "The distance from y to 4 is strictly less than .005" using the absolute value symbol.

   (b) Use the triangle inequality to give a bound for $|(x + y) - 5|$.

3. A triangle in the plane has its vertices at $A(7/5, 19/5)$, $B(2, 3)$, and $C(21/13, 90/13)$.
   (a) Which of its three sides $\overline{AB}$, $\overline{AC}$, or $\overline{BC}$ is the longest?

   (b) Is the triangle isosceles? Explain.