Math 251 **Quiz 02**

September 17, 2013; 10 minutes Name: _____

This quiz is *open-note*, but no books or calculators may be used. On this quiz, you must justify your answers where indicated. A word on the notation: I prefer arrows to bold for denoting vectors. The meaning is identical.

1. (4 points) Let $\vec{v} = \overrightarrow{PQ}$, where $P = (-4,-4)$ and $Q = (-1,-8)$. Which of the vectors with the following given tails and heads are equivalent to $\vec{v}$?

   A. $(4,4)$, $(1,0)$

   B. $(0,0)$, $(3,-4)$

   C. $(-1,0)$, $(2,-4)$

   D. $(4,-3)$, $(5,-7)$

2. (4 points) Let $A = (-5,5)$, $B = (-2,6)$, $P = (0,1)$, and $Q = (12,5)$. Are $\overrightarrow{AB}$ and $\overrightarrow{PQ}$ parallel, and if so, do they point in the same direction? Justify your answers.

3. (4 points) Let $\vec{v} = \langle 5,9 \rangle$. Find a unit vector that points in the same direction as $\vec{v}$ (our textbook calls such a vector $\mathbf{e}_{\vec{v}}$). You can leave your answer unsimplified (no need to evaluate cumbersome square roots, etc.).