Math 243 **Weekly Assignment 3** **DUE 09/16/2016**

Name: _____

Answer the questions on the worksheet and not on a separate sheet of paper. Please circle your answers and justify your work for full credit.

1. (5 points) Let P be the point $(2, 3)$ in $\mathbb{R}^2$ and $\mathbf{d} = \langle 10, 1 \rangle$. If we view $\mathbf{d}$ as starting from the origin, what is the distance from P to $\mathbf{d}$?

2. (5 points) Let $\mathbf{a}$ and $\mathbf{b}$ be vectors in $\mathbb{R}^2$. If $\mathbf{a} = \mathbf{b}$, it is easy to see that

$$\text{proj}_{\mathbf{b}}\mathbf{a} = \text{proj}_{\mathbf{a}}\mathbf{b}.$$

Draw a picture where the above equality is true when $\mathbf{a} \neq \mathbf{b}$. Make sure to write out a justification (with words).