Dot product

Name: _____ Date: _____

6 questions | 13 marks

1. Calculate $(5, 2) \cdot (-1, 4)$. [2 marks]

2. Calculate $(3, -4) \cdot (3, -4)$ and interpret it. [2 marks]

3. Classify the angle between $(1, 2)$ and $(-3, 1)$. [2 marks]

4. Find k if $(k, 2) \cdot (3, -1) = 10$. [2 marks]

5. If $\mathbf{a} \cdot \mathbf{b} = 7$ and $\mathbf{a} \cdot \mathbf{c} = -2$, find $\mathbf{a} \cdot (2\mathbf{b} - 3\mathbf{c})$. [2 marks]

6. Given $|\mathbf{a}| = 5$, $|\mathbf{b}| = 2$ and $\mathbf{a} \cdot \mathbf{b} = -3$, find $|\mathbf{a} + \mathbf{b}|$. [3 marks]