Scalar/vector projections

Name: _____ Date: _____

6 questions | 16 marks

1. Find the scalar projection of $(3, 4)$ onto $(1, 0)$. [2 marks]

2. Find the vector projection of $(2, 5)$ onto $(0, 2)$. [2 marks]

3. Project $(5, 1)$ onto $(1, 1)$. [2 marks]

4. Resolve $(4, 2)$ into components parallel and perpendicular to $(1, 1)$. [3 marks]

5. Find the scalar projection of $(-2, 3)$ onto $(2, 0)$ and the length of the projected vector. [3 marks]

6. Show that replacing v by $2\mathbf{v}$ does not change $\text{proj}_{\mathbf{v}}\,\mathbf{u}$. [4 marks]