Quiz 1 — MA261 — June 16, 2017
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All quizzes are scored out of 20 points. Show your work on all problems to receive full credit. Partial credit will be awarded where progress is shown. 20 points also earns you a sticker.

1. (8 points) Let $\mathbf{u} = \langle 1, 0, 5 \rangle$ and $\mathbf{v} = \langle -2, 6, 1 \rangle$. Find:

   (a) $2\mathbf{u}$ (b) $\mathbf{u} - \mathbf{v}$ (c) $\mathbf{u} \cdot \mathbf{v}$ (d) $\mathbf{u} \times \mathbf{v}$

2. (6 points) Find a value for t such that the vectors $18\mathbf{i} + t\mathbf{j}$ and $2\mathbf{i} - 4t\mathbf{j}$ are perpendicular.

3. (6 points) $\mathbf{a}$ and $\mathbf{b}$ form two sides of the equilateral triangle with side length 2 shown below. Find $|\mathbf{a} \times \mathbf{b}|$. Should $\mathbf{a} \times \mathbf{b}$ point into the page, or out of the page?