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QUIZ MATH 151 Sections 525-527
WEEK 2

</div>

NAME_____ SECTION_____

Show all you work and box your final answer.

1. [30pts] Given $\mathbf{a} = \langle 1, 6 \rangle$ and $\mathbf{b} = \langle 1, -1 \rangle$. Find $|\mathbf{a} + 2\mathbf{b}|$.

2. Given $\mathbf{a} = \langle -8, 6 \rangle$.

   (a) [15pts] Find a unit vector $\mathbf{u}$ that has the same direction as $\mathbf{a}$.

   (b) [15pts] Find a vector $\mathbf{b}$ that has the opposite direction to the given vector $\mathbf{a}$ and that satisfies $|\mathbf{b}| = 8$.

3. [40pts] Two forces act on a 50kg object. One force has magnitude 60N directed $\frac{\pi}{3}$ clockwise from the positive x-axis and the other has a magnitude 30N at $\frac{\pi}{4}$ clockwise from the positive y-axis. What is the resultant force $\mathbf{F}$?