

QUIZ MATH 151 Sections 525-527
WEEK 2

NAME _____ SECTION _____

Show all your work and box your final answer.

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

2. Given $\mathbf{a} = \langle -6, 8 \rangle$.
 - (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 $|\mathbf{b}| = 9$.

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} ?