

MATH 3503 Fall 2018

Quiz 1

Let  $\vec{x} = \langle 3, 1 \rangle$  and  $\vec{y} = \langle -2, 1 \rangle$ .

Calculate

i)  $\vec{x} - 2\vec{y}$  and

ii)  $\|\vec{x} + \vec{y}\|$

Solution:

$$\begin{aligned} \text{i) } \vec{x} - 2\vec{y} &= \langle 3, 1 \rangle - 2\langle -2, 1 \rangle \\ &= \langle 3, 1 \rangle - \langle -4, 2 \rangle \\ &= \langle 7, -1 \rangle \end{aligned}$$

$$\begin{aligned} \text{ii) } \|\vec{x} + \vec{y}\| &= \|\langle 3, 1 \rangle + \langle -2, 1 \rangle\| \\ &= \|\langle 1, 2 \rangle\| \\ &= \sqrt{1^2 + 2^2} \\ &= \sqrt{1+4} \\ &= \sqrt{5} \end{aligned}$$