Physics 4A
Fall 2025

Name _____

Lab: 8:00 am 11:20 am 2:40 pm (circle one)

Quiz #3: Vectors and Coordinate Systems

Problem 1 (2 points)

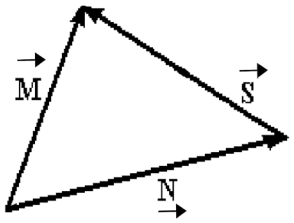
For the vectors shown in the figure, express vector $\vec{S}$ in terms of vectors $\vec{M}$ and $\vec{N}$.

a) $\vec{S} = \vec{M} + \vec{N}$

b) $\vec{S} = \vec{M} - \vec{N}$

c) $\vec{S} = \vec{N} - \vec{M}$

d) none of the above



Problem 2 (3 points)

Vector $\vec{A} = -2.00\hat{i} + 4.00\hat{j}$ and vector $\vec{B} = 4.00\,\hat{i} - 3.00\,\hat{j}$. What are the magnitude and direction of vector $\vec{C} = 3.00\vec{A} + 2.00\vec{B}$?

Problem 3 (5 points)

Two force vectors, $\vec{A}$ and $\vec{B}$, are shown below. Force $\vec{A}$ has a magnitude of 12.5 N and force $\vec{B}$ has a magnitude of 6.00 N. Find the magnitude and direction of $\vec{A} - \vec{B}$.