

Name _____
Honors Physics
Period _____



Date _____
Vectors/Projectiles WS #4H
Mrs. Nadworny

Adding Vectors

(12 pts)

Directions – Read each question carefully and select the choice that best answers the question.

1. A 5.0 newton force and a 7.0 newton force act concurrently on a point. As the angle between the forces is increased from 0° to 180° , the magnitude of the resultant of the two forces changes from
A) 0.0 N to 12.0 N B) 2.0 N to 12.0 N C) 12.0 N to 2.0 N D) 12.0 N to 0.0 N
2. As the angle between two concurrent forces decreases, the magnitude of the force required to produce equilibrium
A) increases B) decreases C) remains the same

Directions – Solve the following problem using the scale method. Be sure to use a ruler and protractor and to show all units. Be **NEAT!** Use the GUESS method to show any calculations necessary.

3. In 1952, the ocean liner *United States* crossed the Atlantic Ocean in less than four days, setting the world record for commercial ocean-going vessels. The average speed for the trip was 60.0 kilometers/hour. Suppose the ship moves in a straight line eastward at this speed for 3.50 hr. Then, due to a strong local current, the ship's course begins to deviate northward by 30.0° North of East, and the ship follows the new North-East course at the same speed for another 2.50 hours.
 - a. Calculate the component displacements (in kilometers) for the two legs of the trip using the GUESS method.
 - b. Find the resultant displacement (in kilometers) for the 6.00 hour period using the scale method. You should use the back of this sheet for the diagram.