Precalculus Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vectors Quiz – Dot Product

Find the dot product of **u** and **v.**

1. **u** = 6i – j, **v =** 2i +5j \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. and  \_\_\_\_\_\_\_\_\_\_\_\_\_

Use the vectors **u =** <6, -3> and **v =** <-2, -1> to find the indicated quantity. Show all work.

3.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Find the angle between the vectors. Show all work. Use the formula 

5. **u** = 5i + 10j and **v =** i – 4j \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 6. **u** = <7, -5> **v** = <10, 3> \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Decide whether the vectors are orthogonal, parallel, or neither. Show your work.

7. **u**  = <39, -12> **v =** <-26, 8> \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 8. **u =** 8i + 5j and **v** = i – j \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **Work formula:**

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Find the work done for each problem. Show all steps. Round to one decimal place if necessary.

9. Bob is carrying a pack of books from the table to the shelf with a force of 30 pounds at a 28o angle. If the distance from the table to the shelf is 10 feet horizontally. How much work has Bob done when he carries these books?

10. How much work is done by a force **F** = <4,7> in moving an object from (-5, 6) to (2, 9)?