Pre-Calculus Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vectors Practice – Dot Product

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

1. **u** = i –8 j, **v = 3**i +7j

**Use the vectors u =** <9, -3> and **v =** <-4, -1> **to find the indicated quantity.**

2. 

3. 

**Find the angle between the vectors.**

4. **u** = 4i + j and **v =** i – 6j

6. **u** = <7, -12> **v** = <12, 3>

**Decide whether the vectors are orthogonal, parallel, or neither.**

7. **u**  = <36, -14> **v =** <-23, 8>

8. **u = 12**i + 8j and **v** = -21i - 14j

**9. u = 5**i + 4j and **v** = 8i – 10

j

**Find projvu and write u as the sum of two vector components.**

9. , 

10. , 

**Find the work done for each problem.**

13. Bob is carrying a pack of books from the table to the shelf with a force of 40 pounds at a 30o angle. If the distance from the table to the shelf is 150 feet. How much work has Bob done when he carries these books?

14. How much work is done by a force **F** = <2,5> in moving an object from (-7, 3) to (2, 8)?