Pre-calculus Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Review – Vectors

1. Find the magnitude and direction angle of **v** = 5i – 9j

2. If **u** has an initial point of (-7,-6) and a terminal point of (4,12), write the vector in component form AND linear combination form.

3. Find 5**u** – 2**v** if **u** = <10,8> and **v =** <3, -4>

4. Find the unit vector having the same direction as **v** = 16i – 13j

5. Write a vector in component form whose magnitude is 52 and direction angle is 216o

6. Find the dot product given **u =** <-22, 14> and **v** = <20, -11>

7. Find projvu and write **u** as the sum of two vector components, given **u** =2i – 7j and **v** = 3i + 10j.

8. A person is pulling a freight cart with a force of 29 N at 57o. How much is work is done in moving the cart 199 m?

9. If **u** = -2i -6j, **v =** 21i – 20j, and **w** = 12i – 22j, find the following

a. **v –** 2**w**

b. 6 + 

c. 

d. unit vector in direction of **w**

e. magnitude and direction angle of **v**

f. the angle between **u** and  **v**

10. Determine if the following vectors are orthogonal, parallel, or neither.

a. 

b. 

c. 

11. A Frisbee is thrown three times: 40 m at 210o, 60 meters at 105o and then 50 m at 317o. Determine the frisbee’s resultant displacement and angle.

12. A wagon carrying Rebecca is being pulled by two of her older siblings with forces of 400N in a direction 29o north of west and 183 N in a direction 57o south of west. Determine the resultant force that is acting on the wagon and the direction.

13. A hot air balloon drifts 34 km in the direction 230o. An abrupt change in air movement carries the balloon 17 km in a direction 160o. Determine the balloon’s resultant displacement and direction.

14. Determine the work done in moving an object from (3,11) to (-25, 8) by a force **F** <-19, -6>.