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

Vectors Quiz One Review – Forms and Operations

**Find the vector v that satisfies the following conditions. Write your answer in component form.**

1. Initial point (8,5); terminal point (-6,-1)

2. ****

**Find the vector v that satisfies the following conditions. Write your answer in linear combination form.**

3. Initial point (8,20); terminal point (17,30)

4. 

**Use the vectors** **u** = <-4,-8>, **v** = <-3,7>, **w** = <9, -15> **to perform the given operations.**

5. **w** + 2**u**

6. 3**v** – 3**w**

7. 4 - 

**Use the vector** **u** = 8i –25j and **v** = 20i + 35j **to perform the given operations**

8. 

9. 3**v**

10. 4**u** – 5**v**

**Find the magnitude and direction angle of each vector**

11. **v** = -20i + 18j

12. **v** = <12, -35>

**Solve each of the following by resolving vectors.**

13. A Boeing 727 can travel at a speed of 525 miles per hour in still air. If one traveling 50° east of north encounters a wind blowing at 35 miles per hour 15° south of west, find the resulting speed and direction of the plane.

14. Two people are pushing a piano. One person pushes it with 185 N at an angle of 70o while the other pushes it with 230N at an angle of 40o. In what direction does the piano move and with how much force?

15. Ms. Smith travels the second floor of the high school building walking north through the hall for 30 meters. She then heads across the bridge on the second floor for 25 meters at 120°. She then travels 15 meters north and turns in to the math department where she walks 8 meters at 6°. What is the displacement of her trip from her point of origin and the direction she traveled?