**Pre Calculus**

**HW Set 4**

**ALL ANSWERS MUST BE PLACED ON ATTACHED ANSWER SHEET!! WORK IS TO BE DONE NEATLY ON YOUR OWN PAPER AND STAPLED TO THE BACK OF THE ANSWER SHEET**

***Find the component form of AB. Then find the magnitude of AB.***

1. A (2, 4), B (-1, 3) 2. A (4, -2), B (5, -5) 3. A (-3, -6), B (8, -1)

***Let v = <2, -1> and w = <-3, 5>. Find u***

4. u = v + w 5. u = v – w 6. u = 5w – 2v

***Find the component form of each vector.***

7. || u || = 20, angle = 1508. || u || = 10, angle = 315

***Find k so that u and v are orthogonal.***

9a. u = 3i + 2j 9b. u = -3ki + 5j

 v = 2i – kj v = 2i – 4j

***Perform the indicated operation. Express your answer in a+bi form***

10. (1+i)(2-3i)

11. (+ i) ( - i)

12. 

***Convert the equation to polar form***

13. 3x – y +2 = 0

***Convert the equation to rectangular form***

14. r = 4cos 

***Find the indicated power of each number***

15. (2+2i)

16. (cos + isin )

***Find the indicated roots of each number***

*17. Cube roots of 8(cos+ isin )*

*18. Fifth roots of i*

19. A plane is headed due south with an airspeed of 192 mph. A wind with a bearing of

 78 degrees is blowing at 23 mph. Find the groundspeed and resulting

 bearing of the plane.

20. Eliminate the parameter $\begin{matrix}x=2sinθ\\y=4cosθ\end{matrix}$

HW Set 4 Name

Answer Sheet

1. Component Form \_\_\_\_\_\_ 17. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Magnitude \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Component Form \_\_\_\_\_\_ 18. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Magnitude \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Component Form \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Magnitude \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. U=\_\_\_\_\_\_\_\_\_\_\_ 19. Groundspeed \_\_\_\_\_\_\_\_\_\_\_\_\_
2. U=\_\_\_\_\_\_\_\_\_\_\_ Bearing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. U=\_\_\_\_\_\_\_\_\_\_\_ 20. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_
6. a. \_\_\_\_\_\_\_\_\_\_\_

b. \_\_\_\_\_\_\_\_\_\_\_

1. \_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_\_\_\_
7. \_\_\_\_\_\_\_\_\_\_\_\_\_