AP Physics C
Vector Review Worksheet

1.Two vectors or equal magnitude are acting on an object at the same time. Vector A is acting to the west, while vector is acting to the south. What is the approximate direction of the resultant of these two vectors?
A)Toward the south east.
B)Toward the north west.
C)Toward the south west
D)Toward the north east.

2.At what angle between two vectors will their resultant have a minimum amount?
A)90°
B)180°
C)0°
D)45°

3.A plane is flying through the air at 120 kph toward the north while a wind is blowing toward the east with a speed of 50 kph. What is the magnitude of the actual velocity of the plane with respect to the ground?
A)170 kph
B)85 kph
C)130 kph
D)70 kph

4.Two vectors each have magnitudes of 18 and 5. What is the minimum and maximum value the resultant of these two vectors can have?
A)5.5 and 11.5
B)2.5 and 9
C)3 and 13
D)13 and 23

5.At what angle between vectors does the square of the resultant's magnitude equal the sum of the squares of the magnitudes of each of the vectors?
A)90°
B)180°
C)0°
D)45°

6.Which of the following is an example of a vector quantity?
A.velocity
B.temperature
C.volume
D.mass
E.length

7 .A student adds two vectors with magnitudes of 200 and 40. Which one of the following is the only possible choice for the magnitude of the resultant?
A.100
B.200
C.260
D.40
E.150

8.Vector A points north and vector B points east. If C= B- A, then vector C points:
A.north of east.
B.south of east.
C.north of west.
D.south of west.
E.No conclusion can be made with the information given

Word Problems

1. Find the magnitude and direction of the acceleration vector $\vec{a} = 4\hat{i} - 5\hat{j}$

2. Find the dot product of the two vectors $\vec{F} = 4\hat{i} - 7\hat{j}$ $\vec{x} = -6\hat{i} - 2\hat{j}$

3. Now find the **sum** of $3\vec{F} - \vec{x}$