**Physics 151 Class Exercise: Vectors2**
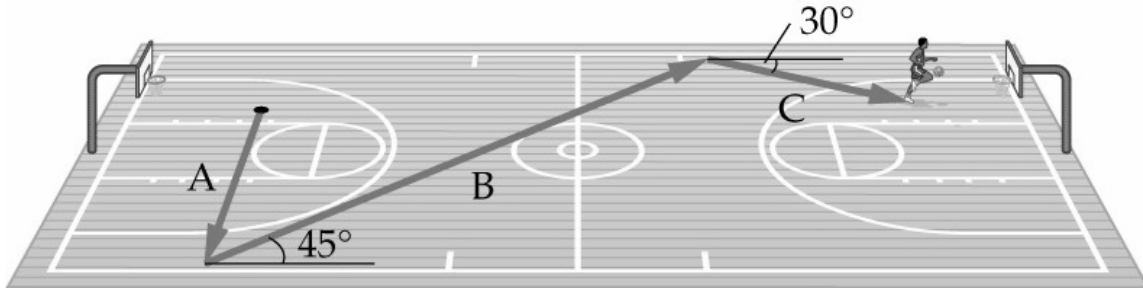
1.       A basketball player runs down the court, following the path indicated by the vectors A, B, and C in the figure below.   The magnitudes of these three vectors are A = 10.0 m, B = 20.0 m, and C = 7.0 m.  Find the magnitude and direction of the net displacement of the player.



a) Estimate the solution.

| Answer: | |
|---|---|
| | |

b) Calculate an accurate solution using the analytical component method.  Does your answer agree with the result of part a?

| Answer: | |
|---|---|
| | |

| Answer: | |
|---|---|
| | |

2. The pilot of an airplane wishes to fly due north, but there is a 75 km/h wind blowing toward the east. (a) In what direction should the pilot head her plane if its speed relative to the air is 310 km/h?

Answer:

(b) Draw a vector diagram that illustrates your result in part (a).

(c) If the pilot decreases the air speed of the plane, should the angle found in part (a) be increased or decreased?

Answer: