Bellwork

A vector v has initial point P and terminal point Q. Find its position vector and write it in form $ai + bj$.

1) $P = (-5, -6), Q = (3,5)$

Use the following vectors to answer the questions.

$$v = 6i - 8j \qquad w = -i + 2j$$

2) $5v - 2w$

3) $\|v\| + \|w\|$

4) $\|v + w\|$

5) $v \cdot w$

6) Find the angle between the two vectors.

7) Find a unit vector in the same direction as v.

Write the vector in form ai +bj given its magnitude and the angle given in standard position. Write your vector in exact, simplified form.

8) $\|v\| = 11, \theta = 225°$

9) Lauren usually strikes out, but she finally hits a softball at a bearing of 38°, with a speed of 11 m/sec. There are winds outside, blowing 19 m/sec with a bearing of 317°. What is the softball's true speed and direction?