

1. Assume that  $\|v\| = 2$ ,  $\|w\| = 3$ , and the angle between  $v$  and  $w$  is  $120^\circ$ . What is  $\|2v + w\|$ ? (9pts.)

2. Consider a fluid flowing through a pipe. Imagine a slice or cross-section of the pipe. Then, the **flux** refers to: (1 pt.)
- (a) the velocity of the fluid.
  - (b) the volume of fluid that flows across the cross-section per unit time.
  - (c) the area of the cross-section times the amount of time the fluid was flowing.
  - (d) the friction between the fluid molecules and the perimeter of the cross-section.