Math 220 - Section 2.2 - Fall 2000

Dot product:
\[ u \cdot v = u_1 v_1 + u_2 v_2 + \ldots + u_n v_n \]

Length of vectors
\[ \|u\| = \sqrt{u_1^2 + u_2^2 + \ldots + u_n^2}, \quad \|u\|^2 = u \cdot u \]

Angle between two vectors:
\[ \cos \theta = \frac{u \cdot v}{\|u\| \|v\|} \]

Projection of \( u \) onto \( v \):
\[ \text{Pr}_v(u) = \frac{u \cdot v}{\|v\|^2} v \]

HW Section 2.2: 1, 5, 6, 7, 11, 12, 15, 16, 17, 20, 21, 24, 25, 26.