5) $p = (1, -2, 4)$ $\quad q = (3, 5, 2)$

$$p \cdot q = |p| \cdot |q| \cdot \cos\theta$$

$$p \cdot q = 3 - 10 + 8 = 1$$

$$|p| = \sqrt{1^2 + (-2)^2 + 4^2} = \sqrt{21}$$

$$|q| = \sqrt{3^2 + 5^2 + 2^2} = \sqrt{38}$$

$$1 = \sqrt{21} \cdot \sqrt{38} \cdot \cos\theta$$

$$1 = \sqrt{798} \cdot \cos\theta$$

$$\frac{1}{\sqrt{798}} = \cos\theta \longrightarrow \text{acos}$$

$$87.97^\circ = \theta$$