

1.2.17

$$\mathbf{P} = (3, -4, 12)$$

$$\cos \theta_1 = \frac{P_1}{|\mathbf{P}|} \text{ From B.5}$$

$$|\mathbf{P}| = \sqrt{9 + 16 + 144} = \sqrt{169} = 13$$

$$\cos \theta_1 = \frac{P_1}{|\mathbf{P}|} = \frac{3}{13} = 76.7^\circ$$

$$\cos \theta_2 = \frac{P_2}{|\mathbf{P}|} = \frac{-4}{13} \approx 107.1^\circ$$

$$\cos \theta_3 = \frac{P_3}{|\mathbf{P}|} = \frac{12}{13} \approx 22.7^\circ$$