

14.

$$V = 2i + j - 3k$$

$$a = 2 \quad b = 1 \quad c = -3$$

$$\|\vec{V}\| = \sqrt{2^2 + 1^2 + (-3)^2}$$

$$= \sqrt{4 + 1 + 9}$$

$$= \sqrt{14}$$

$$\alpha = \cos^{-1} \left( \frac{a}{\|\vec{V}\|} \right)$$

$$= \cos^{-1} \left( \frac{2}{\sqrt{14}} \right) = 57.7^\circ$$

$$\beta = \cos^{-1} \left( \frac{b}{\|\vec{V}\|} \right)$$

$$= \cos^{-1} \left( \frac{1}{\sqrt{14}} \right) = 74.5^\circ$$

$$\gamma = \cos^{-1} \left( \frac{c}{\|\vec{V}\|} \right)$$

$$= \cos^{-1} \left( \frac{-3}{\sqrt{14}} \right) = 143.3^\circ$$