

3 Vectors and the scalar product — Part 2 —Answers

Answers

Work through these after trying the questions yourself.

3.6 $\sqrt{3^2 + 4^2} = \sqrt{25} = 5.$

3.7 1.

3.8 $1 \times 2 + 2 \times 0 + 3 \times 1 = 5.$

3.9 They are perpendicular (at right angles).

3.10 $\sqrt{36 + 64} = \sqrt{100} = 10.$

3.11 $\mathbf{a} \cdot \mathbf{b} = (1)(0) + (0)(1) + (1)(1) = 1.$ $|\mathbf{a}| = |\mathbf{b}| = \sqrt{2},$ so $\cos \theta = \frac{1}{\sqrt{2} \cdot \sqrt{2}} = \frac{1}{2},$ giving $\theta = 60^\circ.$