Worked answers | Pythagoras and Trigonometry

Sine, cosine and tangent

6 questions | 13 marks

Equivalent correct methods earn the corresponding marks.

1. Opposite = 6, adjacent = 8, hypotenuse = 10. Find sin θ. [2 marks]

$\sin\theta = 6/10 = 3/5$.

Answer: 3/5 = 0.6

2. Using opposite = 6, adjacent = 8, hypotenuse = 10, find cos θ. [2 marks]

$\cos\theta = 8/10 = 4/5$.

Answer: 4/5 = 0.8

3. Using opposite = 6, adjacent = 8, hypotenuse = 10, find tan θ. [2 marks]

$\tan\theta = 6/8 = 3/4$.

Answer: 3/4 = 0.75

4. Evaluate tan 32.5° to four decimal places. [2 marks]

Select degree mode.

$\tan 32.5^\circ \approx 0.6371$.

Answer: 0.6371

5. Evaluate cos 60°. [2 marks]

$\cos 60^\circ = 0.5$.

Answer: 0.5

6. A student gives sin θ = 1.4 for an acute angle. Explain why this cannot be right. [3 marks]

The opposite/hypotenuse ratio must be less than 1.

Answer: The opposite side cannot exceed the hypotenuse.