

Test 8: Trigonometry 1

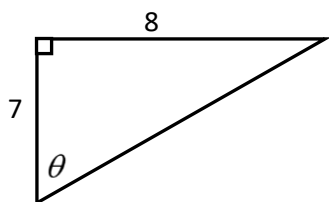
Time: 30 minutes

Marks: 25

Question 1

In each of the following right-angles triangles, write down the value of the required trigonometric ratio (leave your answers as ratios) and calculate the size of the angle marked θ :

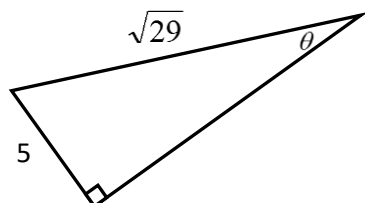
1.1



Find the value of $\sin \theta$ and the size of angle θ

(3)

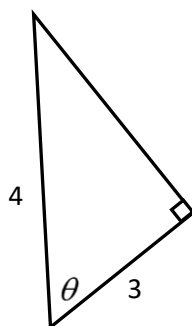
1.2



Find the value of $\cos \theta$ and the size of angle θ

(3)

1.3



Find the value of $\tan \theta$ and the size of angle θ

(3)

[9]

Question 2

2.1 If $\sin \theta = \frac{5}{13}$, determine each of the following without the use of a calculator:

(Hint: Use a sketch) ($\theta < 90^\circ$)

2.1.1 $\cos \theta$

2.1.2 $\tan \theta$

2.1.3 $\frac{\sin \theta}{\cos \theta}$

2.1.4 $\sin^2 \theta$

2.1.5 $\cos^2 \theta$

2.1.6 $\sin^2 \theta + \cos^2 \theta$ (8)

2.2 Make a conjecture about

a) $\frac{\sin \theta}{\cos \theta}$ (2)

b) $\sin^2 \theta + \cos^2 \theta$ (2)

2.3 Simplify the following expressions without the use of a calculator and show ALL the workings:

$$\frac{\sin 45^\circ \sin 90^\circ}{\cos 0^\circ \cos 60^\circ} \quad (5)$$

[17]