



## Trigonometry

2003

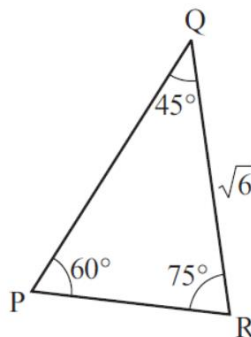
29 In triangle PQR

$$\angle QPR = 60^\circ$$

$$\angle PQR = 45^\circ$$

$$\angle QRP = 75^\circ$$

$$RQ = \sqrt{6} \text{ units}$$



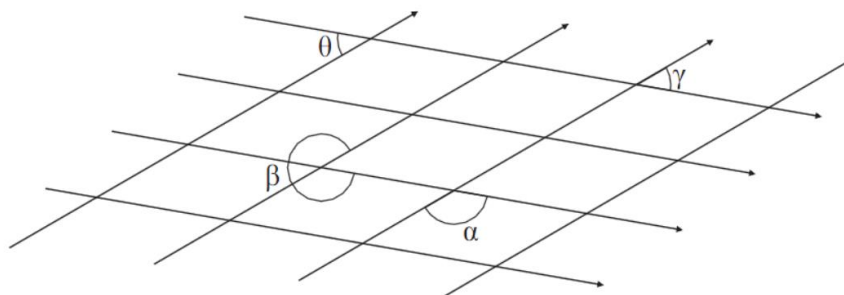
Given that  $\cos 60^\circ$  is  $\frac{1}{2}$ , find the length of side PR. (The diagram is not drawn to scale.)

- A 2
- B  $\sqrt{3}$
- C  $\sqrt{2}$
- D  $\sqrt{6}$


**Trigonometry**

# 2004

- 10** The diagram shows two sets of parallel lines. Angles  $\theta$ ,  $\alpha$ ,  $\beta$  and  $\gamma$  are as marked.



Which of the following statements are true? (shade **all** that apply)

- A**  $\cos \alpha = -\cos \theta$
- B**  $\sin \beta = -\sin \theta$
- C**  $\tan \gamma = -\tan \theta$
- D**  $\sin (\theta + \alpha) = 1$



## Trigonometry

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# 2005

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- 27 A circle has a diameter of 20 cm.  
The line AC is a diameter of the circle.  
B is a point on the circumference of the circle with  $AB = 12$  cm.  
The point D lies on the arc AC on the opposite side to point B.

What is the sine of  $\angle BDC$ ?



## Trigonometry

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2006

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- 6 The sides of triangle ABC are as follows:

$$AB = 3, AC = 2, BC = 4$$

Use the cosine rule,  $a^2 = b^2 + c^2 - 2bc \cos A$ , to find the cosine of  $\angle BAC$

- A  $-\frac{1}{4}$
- B  $\frac{1}{16}$
- C  $\frac{1}{4}$
- D  $\frac{\sqrt{5}}{6}$
- E  $\frac{1}{2}$



## Trigonometry

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# 2008

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- 19 I stop while out walking and take the bearing of a windmill and note it as  $\theta^\circ$ . I then walk 5 km north and take the bearing again – it is now  $2\theta$ .

How far away, in km, was the windmill from the position where I took the first bearing?

- A  $5 \cos \theta$
- B  $5 \cos 2\theta$
- C  $10 \cos \theta$
- D  $5 \sin 2\theta$
- E  $10 \sin \theta$