Credit Revision - Further Trigonometry

2012 Paper 2

12. $f(x) = 3 \sin x°, \qquad 0 \leq x < 360$

(*a*) Find $f(270)$.

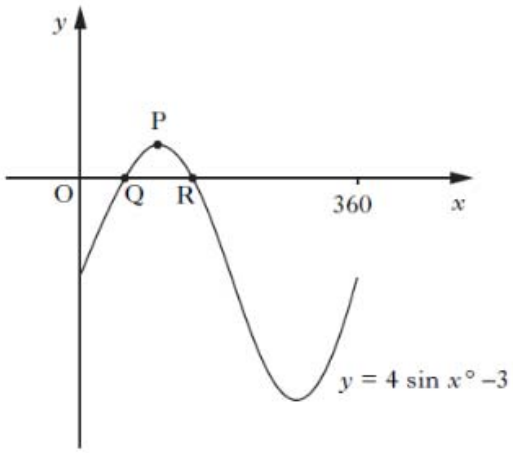
(*b*) $f(t) = 0{\cdot}6$.

Find the two possible values of t. 1KU

4RE

2011 Paper 2

12. Part of the graph of $y = 4 \sin x° - 3$ i



The graph cuts the x-axis at Q and R.

P is the maximum turning point.

(*a*) Write down the coordinates of P. 1RE

(*b*) Calculate the x-coordinates of Q and I 4RE

2010 Paper 2

13. The depth of water, D metres, in a harbour is given by the formula

$$D = 3 + 1{\cdot}75 \sin 30h°$$

where h is the number of hours after midnight.

(*a*) Calculate the depth of water at 5 am.

(*b*) Calculate the maximum difference in depth of the water in the harbour. 2KU

Do not use a trial and improvement method. 2RE

2005 Paper 2

11. (*a*) Solve algebraically the equation

$$\sqrt{3}\sin x° - 1 = 0 \qquad 0 \leq x < 360.$$

3KU

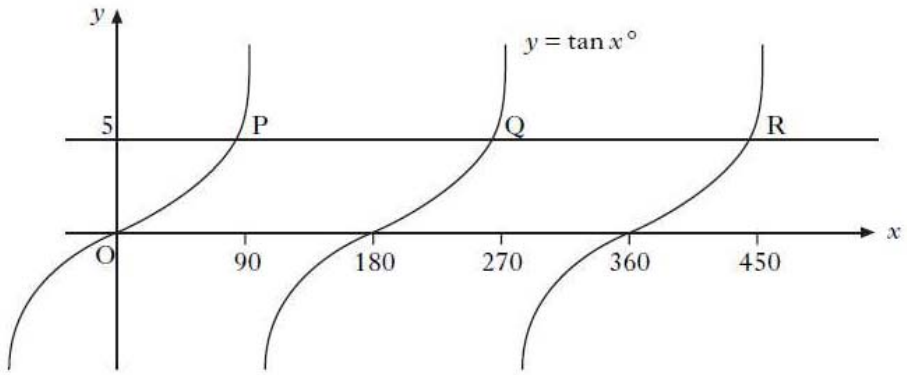
(*b*) Hence write down the solution of the equation 1RE

$$\sqrt{3}\sin 2x° - 1 = 0 \qquad 0 \leq x < 90.$$

2008 Paper 2

12. The diagram shows part of the graph of $y = \tan x°$.

The line $y = 5$ is drawn and intersects the graph of $y = \tan x°$ at P and Q.



(*a*) Find the x-coordinates of P and Q. 3RE

(*b*) Write down the x-coordinate of the point R, where the line $y = 5$ next intersects the graph of $y = \tan x°$. 1RE

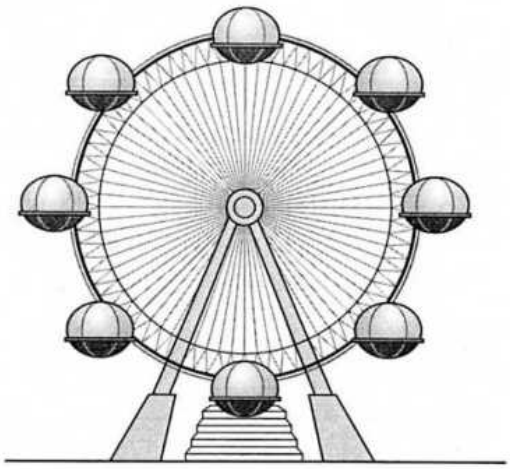
2007 Paper 2

10. Solve **algebraically** the equation 3KU

$$5 \cos x° + 4 = 0, \quad 0 \leq x < 360.$$

2006 Paper 2

10. Emma goes on the "Big Eye".



Her height, h metres, above the ground is given by the formula

$$h = -31 \cos t° + 33$$

where t is the number of seconds after the start.

(*a*) Calculate Emma's height above the ground 20 seconds after the start. 2KU

(*b*) When will Emma first reach a height of 60 metres above the ground? 3RE

(*c*) When will she next be at a height of 60 metres above the ground? 1RE