

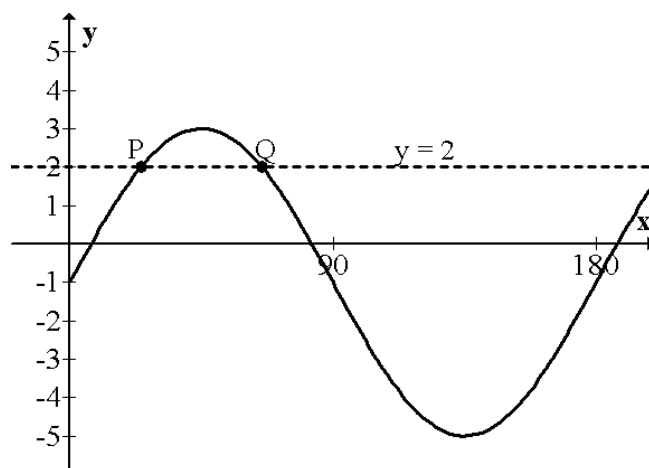
## Trigonometric Equations

1. Solve the following equations.

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|--|--|
| (a) $2\sin 2x + 1 = 0$ $0 \leq x \leq 360$         | (b) $2\cos 2x + \sqrt{3} = 2\sqrt{3}$ $0 \leq x \leq 2\pi$ |
| (c) $3\tan^2 x - 1 = 0$ $0 \leq x \leq 2\pi$       | (d) $3\cos^2 x - 2\cos x - 1 = 0$ $0 \leq x \leq 360$      |
| (e) $4\tan 3x + 6 = 9$ $0 \leq x \leq 360$         | (f) $4 + 5\sin 3x = 3$ $0 \leq x \leq 180$                 |
| (g) $6\tan^2 x - 7\tan x = -2$ $0 \leq x \leq 360$ | (h) $4\sin^2 x - 1 = 2$ $0 \leq x \leq \pi$                |
| (i) $6\sin 2x - 1 = -3$ $0 \leq x \leq 180$        | (j) $6\sin^2 x - 5\sin x = 6$ $0 \leq x \leq 360$          |

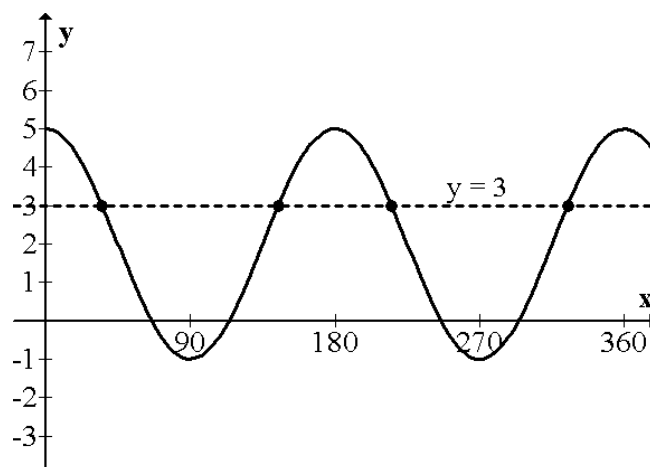
2. (a) The diagram shows the graph of  $y = a\sin bx + c$ .  
Write down the value of a, b and c.

- (b) Find the coordinates of P and Q, the points of intersection with this curve and the line  $y = 2$ .

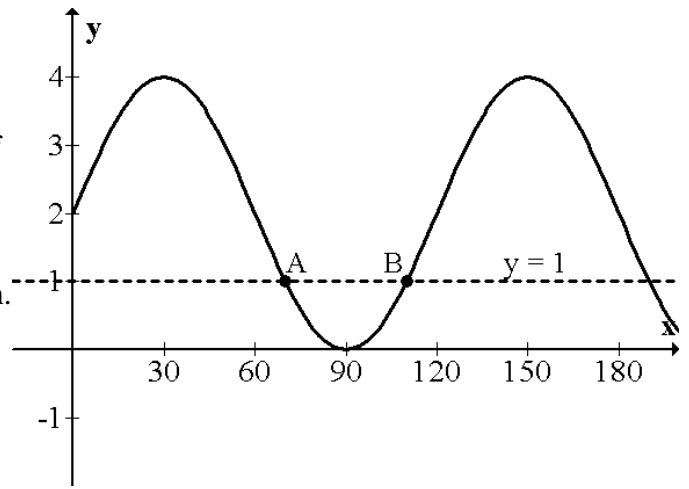


3. (a) The diagram shows the graph of  $y = a\cos bx + c$ .  
Write down the values of a, b and c.

- (b) Find the points of intersection of the line  $y = 3$  and this curve.

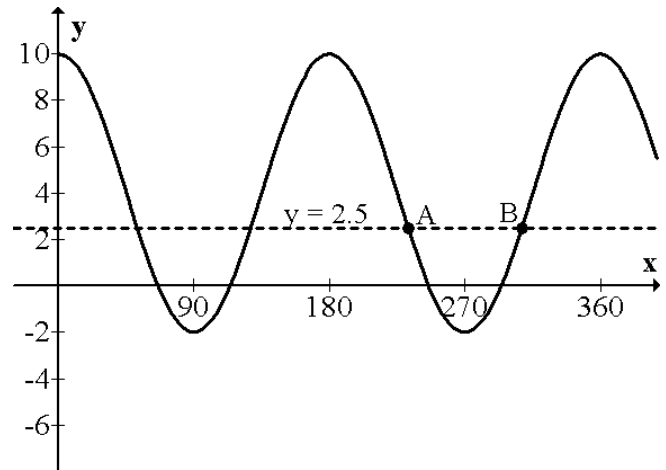


4. (a) The diagram opposite shows the graph of  $y = p \sin qx + r$ .  
Write down the equation of this graph.



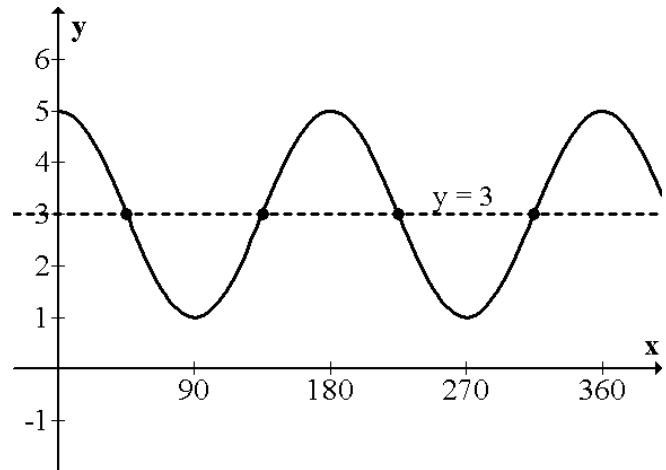
- (b) The line  $y = 1$  is drawn on the same graph.  
Find the coordinates of A and B.

5. (a) The diagram opposite shows the graph of  $y = a \cos bx + c$ .  
Write down the equation of this graph.



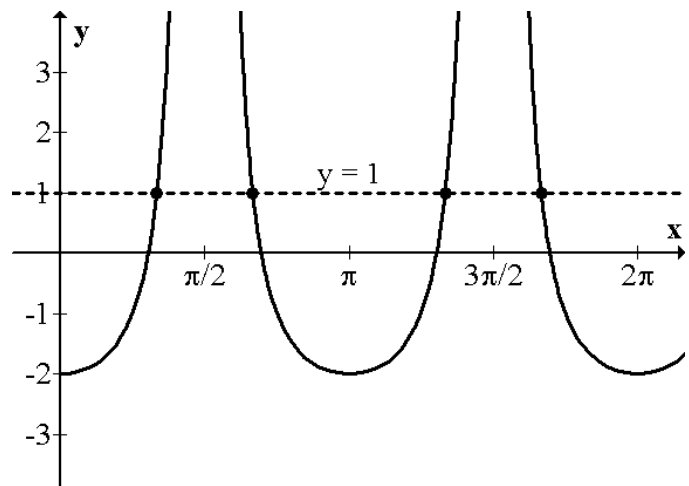
- (b) Find the coordinates of A and B,  
points of intersection of the curve and  
the line  $y = 2.5$ .

6. The diagram shows the graph of  $y = 4 \cos^2 x + 1$ .



- Find the points of intersection of  
this curve and the line  $y = 3$  in  
the range  $0 \leq x \leq 360$

7. The diagram shows the graph of  $y = \tan^2 x - 2$ .



- Find the points of intersection of  
this curve and the line  $y = 1$  in  
the range  $0 \leq x \leq 2\pi$ .

