

Answers:

1 (a) $A(-1, 1)$

(b) $xc = 3$

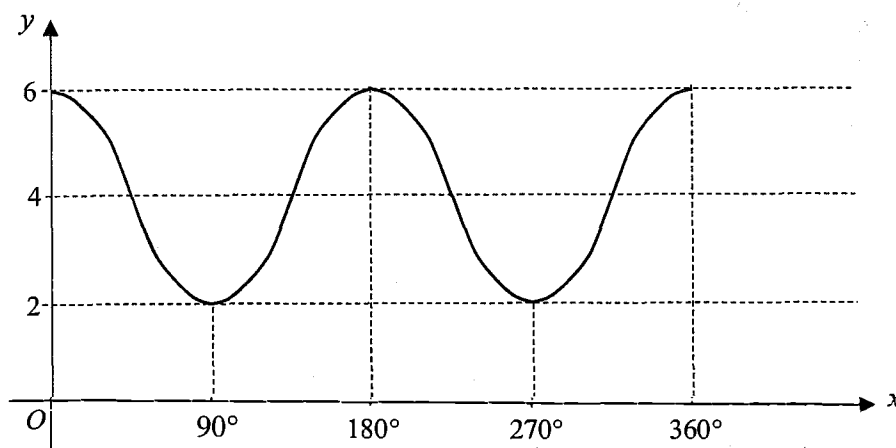
2 (a) increasing function

(b) $\tan x + \frac{\pi}{6} \cos(3x - 5) + c$

3 (a) $c = 4$

(b) amplitude = 2, period = 180°

(c)



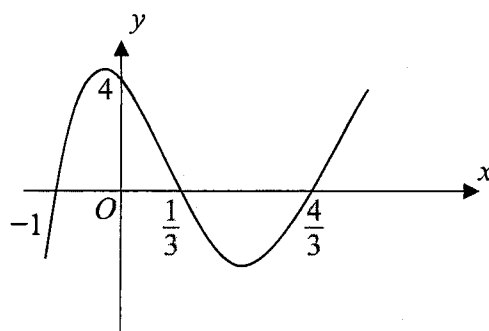
4 $y = -\frac{3}{4} \ln(2x - 1) + 2x + 5$

5 (a) $1 + 18x + 135x^2 + \dots$; $a = 5$, $b = -2$

(b) $-93 \frac{27}{32}$

6 (i) $f(x) = (x+1)(3x-4)(3x-1)$ (ii)

(iii) $-1 \leq x \leq \frac{1}{3}$, $x \geq \frac{4}{3}$



7 (ii) $x = 63.4^\circ, 135^\circ, 243.4^\circ, 315^\circ$

8 (i) \$65000

(ii) \$83935.38

(iii) 6.36 years

9 (a)(i) $a > \frac{1}{4}$

(ii) $x < -4$ or $x > 1$

10 (a)(i) $\frac{1}{c}$

(ii) $\frac{2c}{c^2 + 1}$

(b) $= \frac{1}{2}(\sqrt{3} - 1)$

11 (a) 1 m/s^2

(b) $t = 3.5, 1$

(c) 1.25 m

12 (i) $\frac{3\sqrt{3}}{2}x^2$

(iii) $x = 0.961$

(iv) $14.4 \text{ cm}^2, \text{ min}$

