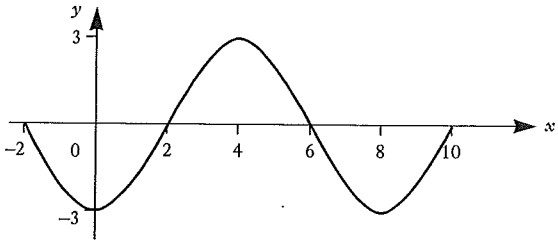
1992 — HIGHER MATHEMATICS ANSWERS

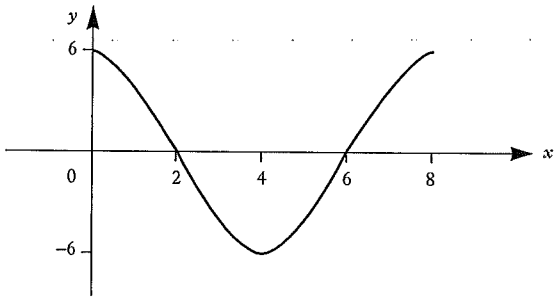
PAPER I

1. $y = 3x - 4$
2. *(a)* CE: $y = -3x + 5$; BD: $y = x + 1$ *(b)* $J = (1, 2)$
3. $k = 3$
4. $y = x^3 + x + 4$
5. $x = 235 \cdot 3$
6. $f(g(x)) = x$
7. *(a)* $\sin x^\circ - 3\cos x^\circ = \sqrt{10}\sin(x - 71 \cdot 6)^\circ$; $k = \sqrt{10}$, $\alpha = 71 \cdot 6$

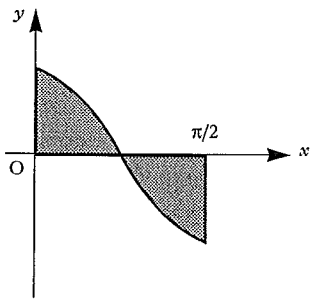
   (b) Maximum value $= 5 + \sqrt{10}$ where $x = 161 \cdot 6$
8. $\dfrac{64}{3}$
9. 45 m
10. *(a)* graph of $y = g(x)$



(b) graph of $y = -2g(x)$



11. $3x^{1/2} + 2\sin x\cos x$ or $(3\sqrt{x} + \sin 2x)$
12. 3
13. $3 \cdot 43$
14. *(a)* 0 *(b)* graph of $y = \cos 2x$ — positive/negative cancel.



15. $C = (5, 0, -5)$
16. $\dfrac{25}{2}\sqrt{3}\ un^2$ or $(21 \cdot 6\ un^2)$