Sec 4 Maths

Exam papers with worked solutions

SET B
PAPER 2
Answer

Compiled by

THE MATHS CAFE

Answer Key

1. **(i)** $11+6\sqrt{3}$

(ii) $-11+18\sqrt{3}$

2. $\frac{-3}{x-2}+\frac{2x}{x^2+1}$; -2.34

3. **(i)** $\alpha+\beta=\frac{3}{2}$, $\alpha\beta=-8$

(ii) $p=\frac{3}{2}$, $q=-8$

4. **(i)** $P(0, \ln 3)$, $Q(-1, 0)$

(ii) The asymptote is $x=-\frac{3}{2}$

(iii) $y=-2-2x$

5. **(a)** $n=6$

(b) 18564

6. **(i)** $x=\pi$

(ii)

$$y=-\frac{1}{2}\cos 2x-\frac{1}{2}x+\frac{1}{8}\sin 4x-\frac{1}{2}+\frac{\pi}{4}$$

7. **(i)** (0, 2)

(ii) 1.65 sq units

8. **(ii)** $\sqrt{17}\cos(\theta-14.0°)$

(iii) 14.0°

(iv) 57.4°

9. **(a)** 0, 2, 4, 6

(b)(ii) $x<0$, $2<x<4$, $x>6$

10. **(ii)** $\frac{5\sqrt{2}}{2}=3.54$

(iii) $12\frac{1}{2}cm^2$, max

11. **(iii)**

$$AT^2=AE\times AR$$

$$\frac{RD}{DM}=\frac{RE}{EA}=\frac{2}{1}$$

$$AT^2=\frac{1}{2}RE\times\frac{3}{2}RE=\frac{3}{4}(RE)^2$$

$$=\frac{4}{3}(RD)^2$$

$$3AT^3=4RD^2$$

12. **(i)** $t=4$; Dist travelled=48m

(ii) t=1, 6

(iii) 84 m

(i) $-16\frac{1}{3}ms^{-1}$

(ii) $t>\frac{5}{3}$

13. **(i)** $(-2, -1)$; $4\sqrt{2}$

(ii) $2\sqrt{10}$

(iii) $4\sqrt{5}$

(iv) (1, 2)