MATHS

BOOKS - CENGAGE PUBLICATION

CURVE TRACING

Illustrations

1. Find derivative of $y = x - \sin x$

▶ **Watch Video Solution**

2. Find the derivative of $y = 2\cos x + \sin 2x$

3. Draw the graph of $y = \sin x \cos^2 x$

4. Draw the graph of $f(x) = x\cos x - \sin x, \ x \in [-3\pi, 3\pi]$

5. Draw the graph of the function $f(x) = x - \sqrt{x}.$

6. Draw the graph of $y = \dfrac{x^2}{\sqrt{x+1}}$

7. Draw the graph of $x^{2/3} y^{2/3} = 1$

8. Draw the graph of

$$y = (x + 1)^{2/3} + (x - 1)^{2/3}$$

9. Find the derivative of $y = e^x + e^{-2x}$

10. Draw the graph of $y = xe^x$. Find the range of the function. Also find the point of inflection.

11. Draw the graph of $f(x) = x^2 e^{-|x|}$

i) Find the point of maxima/minima.

ii) Find the asymptote is any.

iii) Find the range of the function.

iv) Find the number of roots of the equation

$$f(x) = 1$$

12. Find the minimum integral value of k for which the equation $e^x = kx^2$ has exactly three real distinct solutions.

13. Draw the graph of the function

$$f(x) = \left(\frac{1}{x}\right)^x$$

▶ **Watch Video Solution**

14. Draw the graph of the function:

$$f(x) = -|x - 1|^{\frac{1}{2}}$$

▶ **Watch Video Solution**

15. Discuss the number of roots of the equation $e(k - x \log x) = 1$ for different value of k.

16. Draw the graph of $y = x + \dfrac{1}{x}$.

17. Draw the graph of $f(x) = \ln(1 - \ln\ x)$.

Find the point of inflection.

▶ **Watch Video Solution**

18. Draw the graph of the function $f(x) = 2x^2 - \log_e|x|$

▶ **Watch Video Solution**

19. Draw the graph of $y = |\log_e(x + 3)|$.

20. Draw the graph of $f(x) = \sqrt{1 - e^{-x^2}}$

21. Draw the graph of the relation $y^2 = x^2(1 - x)$

22. Draw the graph of the relation

$$4y^2 = x^2\left(4 - x^2\right)$$

▶ Watch Video Solution

23. Draw the graph of the relation

$$(y - x)^2 = x^3$$

▶ View Text Solution

24. Draw the graph of $y = x^{3/5}$

25. Draw the graph of $y = x^{2/5}$

26. Draw and discuss the graph of

$$f(x) = x^{2/3} - x^{4/3}$$

27. Draw the graph of $f(x) = x|x|$.

▶ **Watch Video Solution**

28. Draw the graph of the relation $y^2 = x^2(1 - x)$

▶ **Watch Video Solution**

29. Draw the graph of $y = \sqrt{\dfrac{1 - x}{1 + x}}$.

▶ **Watch Video Solution**

1. Find the derivative of $y = \sin^2 x - \cos x$

▶ **Watch Video Solution**

2. Draw and discuss the graph of $f(x) = x + \sqrt{x-1}$

▶ **View Text Solution**

3. Draw the graph of $y = \sqrt{1 + x^2} - x$

▶ Watch Video Solution

4. Draw the graph of $y = -\sqrt{6 - 3x^2}$

▶ Watch Video Solution

5. Draw the graph of $y = \dfrac{\sqrt{x}}{x - 1}$

▶ Watch Video Solution

6. Draw the graph of $y = x + \dfrac{1}{x}$.

Watch Video Solution

7. Draw the graph of $y = \sqrt{\dfrac{1 - x}{1 + x}}$.

Watch Video Solution

8. Draw the graph of $\sqrt{|x|} + \sqrt{|y|} = 1$

Watch Video Solution

9. Draw the graph of $y = \sqrt{1 + x^2} - x$

10. Draw and discuss the graph of the function

$f(x) = e^{1/x}$

11. Draw the graph of $y = \dfrac{1}{\log_e x}$

12. Draw the graph of $y = \dfrac{1}{\log_e x}$

13. Draw the graph of $f(x) = e^{-x^2}$. Discuss the concavity of the graph.

14. Draw the graph of $f(x) = \dfrac{e^x}{1 + e^x}$. Also find the point of inflection.

> ▶ **Watch Video Solution**

15. Draw the graph of the function $f(x) = x^x$

> ▶ **Watch Video Solution**

16. Draw the graph of $y = x / \ln \; x$

> ▶ **Watch Video Solution**

17. Draw the graph of $y = (\log_e x)^2$

18. Draw the graph of $y = \log_e (x^2 - 1)$

19. Draw and graph of $f(x) = \dfrac{4 \log_e x}{x^2}$. Also find the range.

20. Draw the graph of the relation

$$y^2 = x^2(1 - x)$$

21. Draw the graph of $f(x) = 2x + 3x^{2/3}$ and discuss the type of non-differentiability for the function. Also find the point of inflection.

22. The function $f(x) = x^{\frac{1}{3}}(x - 1)$ has two inflection points, has one point of extremum, is non-differentiable, has range $\left[-3 \cdot 2^{-\frac{8}{3}}, \infty\right)$

23. Draw the graph of $y = \dfrac{e^x - e^{-x}}{2}$.

24. Draw the graph of $y = |\log_e(x + 3)|$.