



Dr. SNS RAJALAKSHMI COLLEGE OF ARTS AND SCIENCE (Autonomous)

Accredited by NAAC (Cycle-IV) with 'A+' Grade,
(Recognized by UGC & Approved by AICTE, New Delhi and Affiliated to Bharathiar University, Coimbatore)
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Subject: SUPPORTIVE / ALLIED MATHEMATICS-2: BUSINESS CALCULUS AND FINANCIAL COMPUTATION

Code: 21UCR304

QUESTION AND ANSWER

UNIT: 1

1. Evaluate $\lim_{x \rightarrow 0} \frac{2x^3 + 4x^2 + 2}{3x^3 - 2x^2 - 3}$
2. Evaluate $\lim_{x \rightarrow 0} \frac{3x^3 + 5x^2 - 7x + 2}{2x^3 + 6x^2 + 2x - 3}$
3. Find $\lim_{x \rightarrow 3} \frac{x^2 + x - 12}{x^2 - x - 6}$
4. Find $\lim_{x \rightarrow 5} \frac{x^2 - 16}{x - 4}$
5. Find $\lim_{x \rightarrow 5} \frac{x^2 - 25}{x - 5}$
6. Find $\lim_{x \rightarrow \infty} \frac{x^2 - 3x + 9}{x^3 - x + 5}$
7. Find $\lim_{x \rightarrow 5} \frac{(x-2)(x-1)}{x-4}$
8. Find $\lim_{x \rightarrow 6} \frac{(x-3)(x-2)}{x-4}$
9. Evaluate $\lim_{x \rightarrow 2} \frac{x^2 - 5x + 6}{x^2 - 4}$
10. Find the derivative of (i) $y = 10x^5 - 3x^2 + \log x - e^x$ (ii) $y = 5e^x - \log x + \sqrt{x}$
11. If $y = \sqrt{x} + x^{-3} + e^x + \log x$. find $\frac{dy}{dx}$
12. Find the derivative of $y = (x^2 + 5)(3x + 1)$
13. Find the derivative of $y = \frac{3x^2}{4x-1}$
14. Evaluate $\lim_{x \rightarrow 2} \frac{3x^2 - 2x - 8}{5(x-2)}$
15. Evaluate $\lim_{x \rightarrow \infty} \frac{x^2 + x - 2}{x^2 + x + 10}$
16. Evaluate $\lim_{x \rightarrow \infty} \frac{3x^3 + 4x^2}{x^2 + 2x}$
17. Evaluate $\lim_{x \rightarrow \infty} \frac{2n^2 + 3n + 5}{-5n^2 + 7n + 9}$
18. Evaluate $\lim_{x \rightarrow 2} \frac{x^2 - 5x + 6}{x^2 - 4}$
19. Evaluate $\lim_{x \rightarrow 3} \frac{x^2 - 5x + 6}{x^2 - 9}$
20. Differentiate $y = \log \sqrt{2x + 3}$ with respect to x .
21. Find the derivative of $y = (1 + 3x^2)(2x^3 - 1)$
22. Find the derivative of $y = \frac{x^3 + x^2 + 3}{x^2}$
23. Find the derivative of (i) $y = (2x + 3)(3x + 2)$ (ii) $y = (x^2 + 3)(x + 7)$
24. Find the derivative of (i) $y = (x + 5)(3x - 2)$ (ii) $y = (x^2 - 3)(x + 2)$
25. Find the derivative of (i) $y = (x^2 - 16x)$ (ii) $y = x^5 - 3x^3 - 4x - 11$
26. Find the derivative of (i) $y = (x^2 - 7)^2$ (ii) $y = x^3 - 3x^2 + 4x + 3$
27. Find $\lim_{x \rightarrow a} \frac{\sqrt{3a-x} - \sqrt{x+a}}{x-a}$

28. Find $\lim_{x \rightarrow 0} \frac{1 - \sqrt{1 - x^2}}{x^2}$

29. Find $\lim_{x \rightarrow 1} \frac{\sqrt{3-x} - \sqrt{x+1}}{x-1}$

30. Find $\lim_{x \rightarrow 9} \frac{x^2 - 5x - 36}{x-9}$