MATHS

BOOKS - JEEVITH PUBLICATIONS MATHS (KANNADA ENGLISH)

LIMITSAND DERIVATIVES

One Marks Questions With Answers

1. $\lim_{x \to 2} \frac{x^2 + 4}{x + 1}$

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2. $\lim_{x \to 2} \frac{x^2 - 4}{x - 2} \left(\frac{0}{0} \text{form} \right)$

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3. $\lim_{x \to 2} \frac{x^2 - 5x + 6}{x^2 - 4} \left(\frac{0}{0} \quad \text{form} \right)$

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4.

$$\lim_{x \to 3} \left[\frac{1}{x-3} - \frac{3}{x^2 - 3x} \right] (\infty - \infty \text{form} \ )$$

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5. $\lim_{x \to \infty} \dfrac{3x^2 - 4x + 5}{7x^2 + 2x + 3}$

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6. $\lim_{x \to 2} \dfrac{x^6 - a^6}{x - a}$

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7. $\lim_{x \to 2} \frac{\sqrt{x} - \sqrt{2}}{x - 2}$

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8. $It_{\theta \to 0} \frac{\sin 3\theta}{\theta}$

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9. $\lim_{\theta \to 0} \frac{\sin 5\theta}{\tan 4\theta}$

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10. $\lim_{x \to 0} \frac{\tan 7x}{\tan 4x}$

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Two Marks Questions With Answers

1. $\lim_{x \to 0} \frac{x}{\sqrt{1-x}-1}\left(\frac{0}{0}\text{form}\right)$

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2. $\lim_{x \to 0} \frac{\sin(x^2)}{x}$

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3. $\lim_{x \to 0} \frac{3x - \tan 4x}{x + \sin x}$

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4. $\lim_{x \to 0} \frac{1 - \cos x}{x^2}$

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5. $\lim_{x \to 0} \frac{1 - \cos 4x}{1 - \cos 6x}$

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6. $\lim_{x \to a} \frac{\sin x - \sin a}{\sqrt{x} - \sqrt{a}}$

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7. $\lim_{\theta \to x/2} \frac{\cos \theta}{(\pi/2 - \theta)}$

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8. $\lim_{n \to 0} (1+2n)^{\frac{1}{n}}$

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9.

$$\lim_{x \to 0} \frac{3^x - 1}{2x} = \frac{1}{2} \lim_{x \to 0} \frac{3^x - 1}{x} = \frac{1}{2} \log_e 3.$$

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10. $\lim_{x \to 0} \frac{a^x - bx}{x}$

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11. $\lim_{x \to 0} \frac{e^x - 1}{\sin 4x}$

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12. $y = \frac{\sin x}{x^2}$

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13. $y = \frac{1 + \sin x}{1 - \sin x}$

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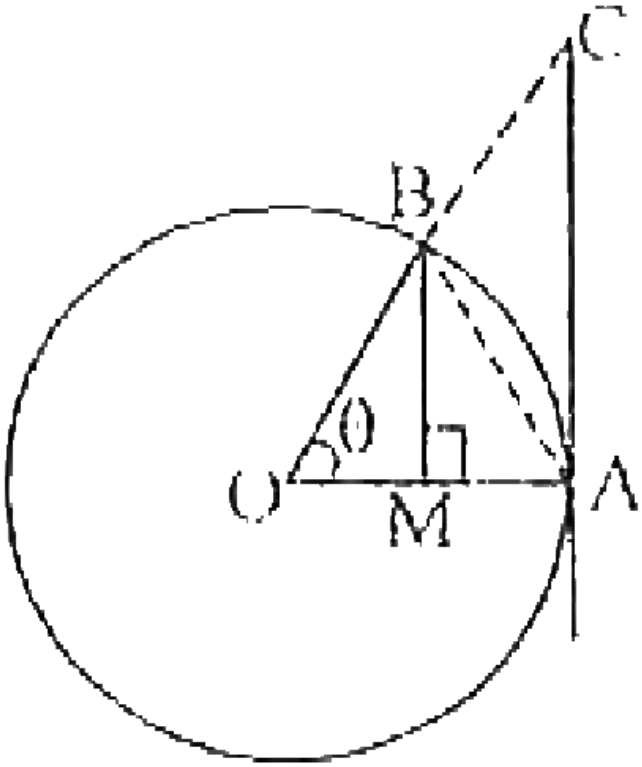
Five Marks Questions With Answers

1. Prove geometrically $\lim_{\theta \to 0} \frac{\tan\theta}{\theta} = 1$ is in radians



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One Marks Questions With Answers

1. $y = \frac{5}{x^2} + \frac{6}{x} + 2$

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2. If $y = x^5 5^x$ find $\frac{dy}{dx}$.

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3. $y = x^3 \sin x$

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4. If $f(x) - 3\tan x - 4\cos x + 2$, Find $f^1(0)$

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Three Marks Questions With Answers

1. Differentiate of $\sin x$ w.r.t. x from first principles

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2. Differentiate of $\cos x$ w.r.t. x from first principles

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3. Differentiate of $\tan x$ w.r.t. x from first principles

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4. Differentiate of $\cot x$ w.r.t. X from first principles

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5. Differentiate of $\sec x$ w.r.t. of from first principles

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6. Differentiate of $\operatorname{cosec} x$ w.r.t. of from first principles

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7. Differentiate of x^n w.r.t. x from first principles

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