



MATHS

BOOKS - RESONANCE DPP ENGLISH

APPLICATION OF DERIVATIVES

Others

1. Let

$$f(x) = x^{105} + x^{53} + x^{27} + x^{13} + x^3 + 3x + 1.$$

If $g(x)$ is inverse of function $f(x)$, then the

value of $g'(1)$ is (a) 3 (b) $\frac{1}{3}$ (c) $-\frac{1}{3}$ (d) not defined



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2. The greatest value of the function $f(x) = 2 \cdot 3^{3x} - 3^{2x} \cdot 4 + 2 \cdot 3^x$ in the interval $[-1, 1]$ is



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3. If at each point of the curve $y = x^3 - ax^2 + x + 1$, the tangent is inclined at an acute angle with the positive direction of the x-axis, then (a) $a > 0$ (b) $a < -\sqrt{3}$ (c) $-\sqrt{3} \leq a \leq \sqrt{3}$ (d) none of these



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4. If $a, b > 0$, then minimum value of $y = \frac{b^2}{a-x} + \frac{a^2}{x}$ in $(0, a)$ is (a) $\frac{a+b}{a}$ (b)

$$\frac{ab}{a+b} \quad (c) \frac{1}{a} + \frac{1}{b} \quad (d) \frac{(a+b)^2}{a}$$



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5. Find maximum possible area that can be enclosed by a wire of length 20cm by bending it in form of a circular sector. 10 (b) 25
(c) 30 (d) 20



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6. If $y = \sin x$, then $\left(d^2 \frac{\cos^7 x}{dy^2} \right)$ is equal to

$35 \cos^3 x - 42 \cos^5 x$ $35 \cos^3 x + 42 \cos^5 x$

$42 \cos^3 x - 35 \cos^5 x$ $-35 \cos^3 x - 42 \cos^5 x$



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