MATHS

BOOKS - JEE MAINS PREVIOUS YEAR

DIFFERENTIAL EQUATIONS

Others

1. The solution of the differential equation $\frac{dy}{dx} = \frac{x+y}{x}$ satisfying the condition

$y(1) = 1$ is (1) $y = \ln x + x$ (2) $y = x\ln x + x^2$

(3) $y = xe(x - 1)$ (4) $y = x\ln x + x$

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2. Solution of the differential equation

$\cos x dy = y(\sin x - y)dx, 0 < x < \frac{\pi}{2}$ (A)

$\sec x = (\tan x + c)y$ (B) $y\sec x = \tan x + c$

(C) $y\tan x = \sec x + c$ (D)

$\tan x = (\sec x + c)y$

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3. The population p(t) at time t of a certain mouse species satisfies the differential equation $\frac{dp(t)}{dt} = 0.5p(t) - 450$ If $p(0) = 850$, then the time at which the population becomes zero is (1) 2 ln 18 (2) ln 9 (3) $\frac{1}{2}$ ln 18 (4) ln 18

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