

E026 Online test

Ref 27

$\frac{dy}{dx} = 8x^2$ Find Y

A	$X^3 + C$	B	$3X^4 + C$
C	$1/X^3 + C$	D	$\ln X + C$
Answer			

Ref 28

Solve $y'' = 3x - 2$, $y(0) = 2$, $y'(1) = -3$, the generalized answer is

A	$X^4 - X^3 - X^2 - 5/2 X + 2$	B	$X^3 - X^2 - X^2 - 5/2 X + 2$
C	$X^2 - 3X + 2$	D	$X^3 - 3X + 2$
Answer			

Ref 29

Find general equation of

$(4X + XY^2)dX + (Y + X^2Y)dY = 0$

A	$\ln(1 + X^2) + 1/2 \ln(4 + Y^2)$	B	$\ln(1 + X^2) + 1/3 \ln(4 + Y^2)$
C	$1/(1 + X^2) + 1/(1 + Y^2)$	D	$(1 + X^2) + (4 + Y^2)$
Answer			

Ref 30

Evaluate the following

$\Gamma(6)$

$2 \Gamma(3)$

A	10	B	30
C	15	D	25
Answer			

Ref 31

Evaluate the following

$$\Gamma(5/2)$$

$$\Gamma(1/2)$$

A	3 / 4	B	3 / 2
C	3	D	1 / 3
Answer			

Ref 32

Find the volume of region R bounded by parabolic cylinder $Z = 4 - X^2$ & planes $X = 0, Y=0, Y=6, Z=0$

A	16	B	32
C	42	D	64
Answer			

Ref33

Laplace transform of $5 \sin 2t - 3 \cos 2t$ is

A	$\frac{10 - 3S}{S^2 + 4}$	B	$\frac{3S - 10}{S^2 + 4}$
C	$\frac{10}{S^2 + 4}$	D	$\frac{3S}{S^2 + 4}$
Answer			

Ref34

. Find

$$4s - 3$$

$$\mathcal{L}^{-1} \frac{\quad}{\quad}$$

$$s^2 + 4$$

A	$\frac{3}{2} \sin 2t - 4 \cos 2t$	B	$4 \cos 2t - \frac{3}{2} \sin 2t$
C	$4 \sin 2t - \frac{3}{2} \cos 2t$	D	$\sin 3t - \cos 4t$
Answer			

Ref 35

Find

$$4s - 3$$

$$\mathcal{L}^{-1} \frac{\quad}{\quad}$$

$$s^{3/2}$$

A	$\frac{8t^{-1/2} - 5t}{\sqrt{\pi}}$	B	$\frac{5t^2}{\sqrt{\pi}}$
C	$\frac{8t^{-1/2} - 5t^{-1/2}}{\sqrt{\pi}}$	D	$\frac{8t^2 - 5}{\sqrt{\pi}}$
Answer			

Ref 36

. Find

$$\mathcal{L}^{-1} \frac{1}{s^2 + 2s}$$

A	$\frac{1}{2} t - \frac{1}{2} e^{-2t}$	B	$t - e^{-t}$
C	$\frac{1}{2} t - \frac{1}{2} e^t$	D	$2 t - e^{2t}$
Answer			

Ref37

The solution of the given differential equation $y' - 3y' + 2y = 2 e^{-t}$ where $y(0) = 2$, $y'(0) = -1$ by Laplace transform is

A	$7 e^{2t} + 4 e^t + e^{-t}$	B	$3 e^{2t} + e^t + 3 e^{-t}$
C	$-7/3 e^{-2t} + 4 e^t + 1/3 e^{-t}$	D	$-7 e^{-2t} + e^t + 3 e^{-3t}$
Answer			

Ref38

A resistor $R = 10 \Omega$ Inductor 2H and a voltage E volt are connected in series with switch S .

At $t = 0$, the switch is closed and $I = 0$.

Find I for $t > 0$ if $E = 40V$

A	$4t - 4 e^{-5t}$	B	$4 - e^{-t}$
C	$4t$	D	4
Answer			

Ref39

Inverse matrix of the matrix for given equations

$$3X_1 - 2X_2 + 2X_3 = 10$$

$$X_1 + 2X_2 - 2X_3 = -1$$

$$4X_1 + X_2 + 2X_3 = 3 \text{ is}$$

A	$\begin{pmatrix} \frac{7}{35} & \frac{6}{15} & \frac{2}{35} \\ \frac{-14}{35} & \frac{-2}{35} & \frac{11}{35} \\ \frac{-7}{35} & \frac{-11}{35} & \frac{8}{35} \end{pmatrix}$	B	$\begin{pmatrix} 7 & 6 & 2 \\ 14 & -2 & 11 \\ -7 & -11 & 8 \end{pmatrix}$
C	$\begin{pmatrix} \frac{1}{35} & \frac{6}{35} & \frac{1}{35} \\ -14 & -2 & 11 \\ -7 & -11 & -8 \end{pmatrix}$	D	$\begin{pmatrix} 1 & 6 & 1 \\ 2 & 3 & 4 \\ 7 & 11 & 8 \end{pmatrix}$
Answer			