

The general solution of the differential equation $y = px + \sqrt{a^2p^2 + b^2}$ is:

$$y = cx + \frac{a}{c}$$

$$y = cx + \frac{a}{c}$$

$$y = cx + \sqrt{a^2c^2 + b^2}$$

$$y = cx - e^c$$

$$y = cx - \sin^{-1}c$$

$$y = cx - e^c$$

$$y = cx - sin^{-1}c$$



The general solution of the differential equation $\sin px \cos y = \cos px \sin y + p$ is:

$$y = cx - e^c$$

$$y = cx + \frac{a}{c}$$

$$y = cx - \sin^{-1}c$$

$$y = cx + \sqrt{a^2c^2 + b^2}$$

13

The solution of equation xdy + ydx = 0 is:

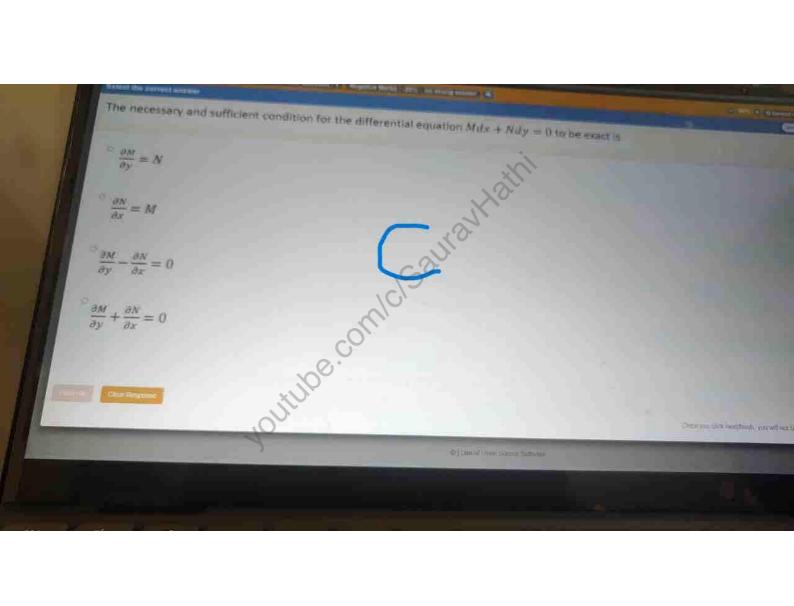
$$xy = c$$

$$^{\circ}x + y = c$$

$$x-y=c$$

$$x/y = c$$

John Complete and the control of the



The equation $(x^4 - 2xy^2 + y^4)dx - (2x^2y - 4xy^3 + \sin y)dy = 0$ is:

An exact differential equation

^o Homogeneous differential equation

Non-exact differential equation

Bernoulli equation

Clear Response

$$^{\circ}$$
 $Ae^{-6x} + Be^{2x}$

$$Ae^{-6x} + Be^{-2x}$$

$$Ae^{6x} + Be^{2x}$$

$$Ae^{6x} + Be^{2x}$$

$$Ae^{6x} + Be^{-2x}$$

The solution of the differential equation: 3y''' - 2y'' - 3y' + 2y = 0 is:

$$^{\circ}Ae^{x}+Be^{-x}+Ce^{2x}/_{3}$$

$$^{\circ}A + Be^{-3x} + Ce^{-x}$$

$$Ae^x + Be^{3x} + Ce^{-3x}$$

$$A + Be^{-3x} + Ce^{-x}$$

$$Ae^{x} + Be^{3x} + Ce^{-3x}$$

$$A + Be^{3x} + Ce^{3x}$$

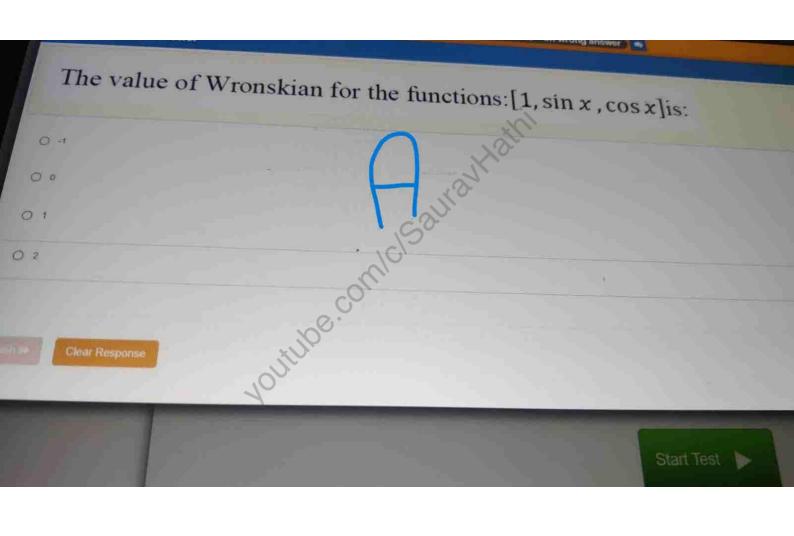
The solution of the differential equation: $y'' + 2\pi y' + \pi^2 y = 0$ is:

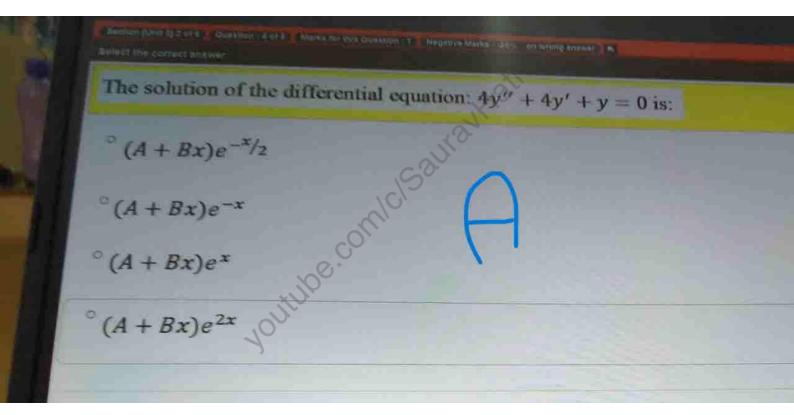
$$(A+Bx)e^{-\pi/2}$$

$$(A + Bx)e^{-\pi x}$$

$$(A+Bx)e^{\pi x}$$

$$(A+Bx)e^{2\pi x}$$





The general solution of equation $x^2y'' + xy' - 4y = 0$ is:

$$y = c_1 e^x + c_2 e^{-x}$$

$$y = c_1 e^x + c_2 e^{-x}$$

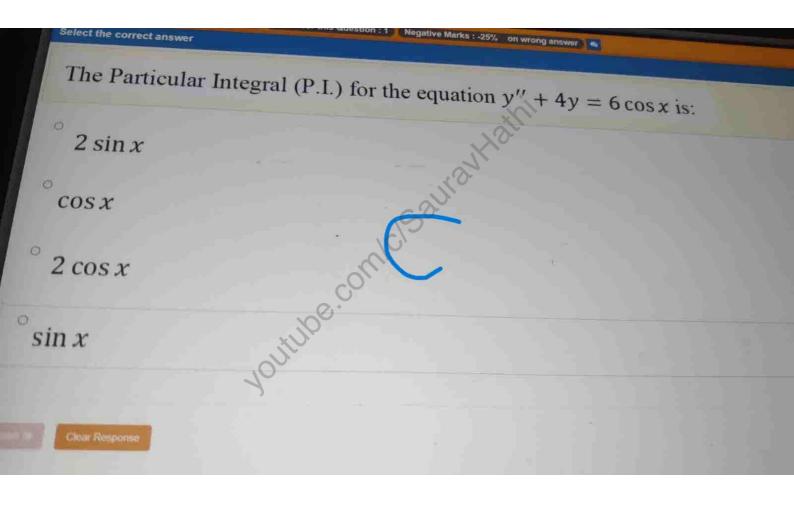
$$y = (c_1 \cos 5x + c_2 \sin 5x)$$

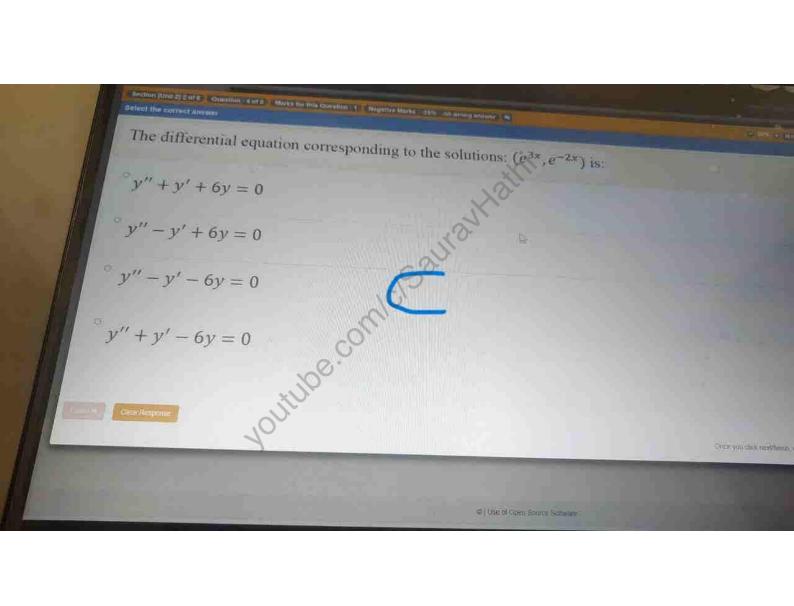
$$y = c_1 e^x + c_2 e^{-5x}$$

$$y = c_1 x^2 + c_2 x^{-2}$$

$$y = c_1 e^x + c_2 e^{-5x}$$

$$y = c_1 x^2 + c_2 x^{-2}$$





The Particular integral of equation: $y'' + 9y = \sin 3x$ is:

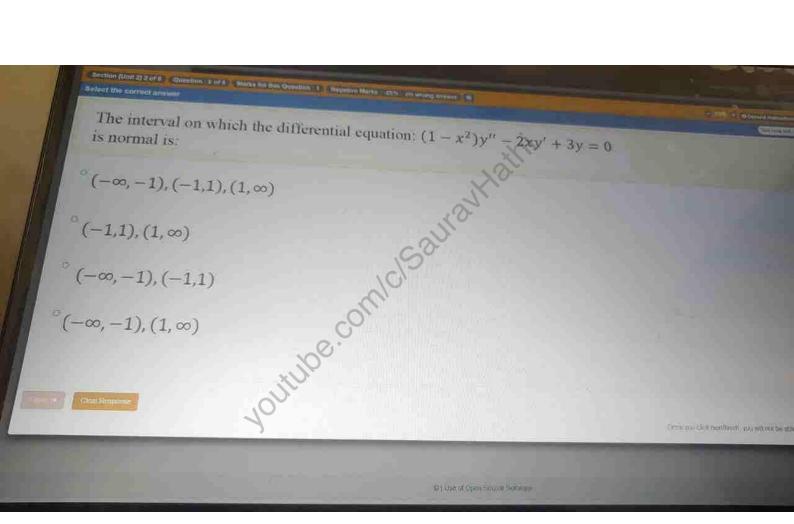
$$y_p = -\frac{x}{6}\cos 3x$$

$$y_p = x \cos 3x$$

$$y_p = \frac{1}{20}\cos 3x$$

$$y_p = \cos 3x$$

$$y_p = \cos 3x$$



Select the correct answer

By method of undetermined coefficients, the trial solution corresponding to the equation $y'' - 3y' - 10y = x^2 + 1$ is:

$$y_p = ax + b$$

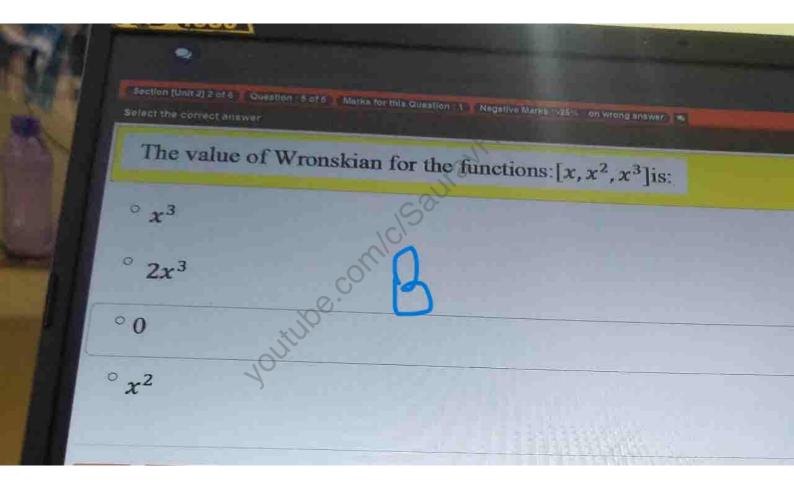
$$y_p = ax^2 + bx + c$$

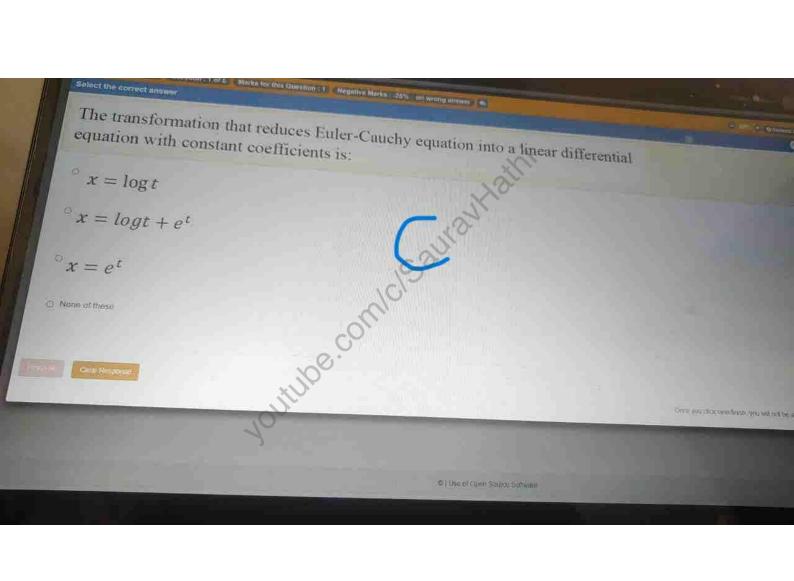
$$y_p = ax^3 + bx^2 + cx + d$$

$$y_p = ae^x$$

Contact Contact

Congress may





The operator forms of the following simultaneous system of equations:

$$6\frac{dy_1}{dx} + 5\frac{dy_2}{dx} + 3y_1 + y_2 = 0, \frac{dy_2}{dx} - 5y_1 + 3y_2 = e^x \text{ is:}$$

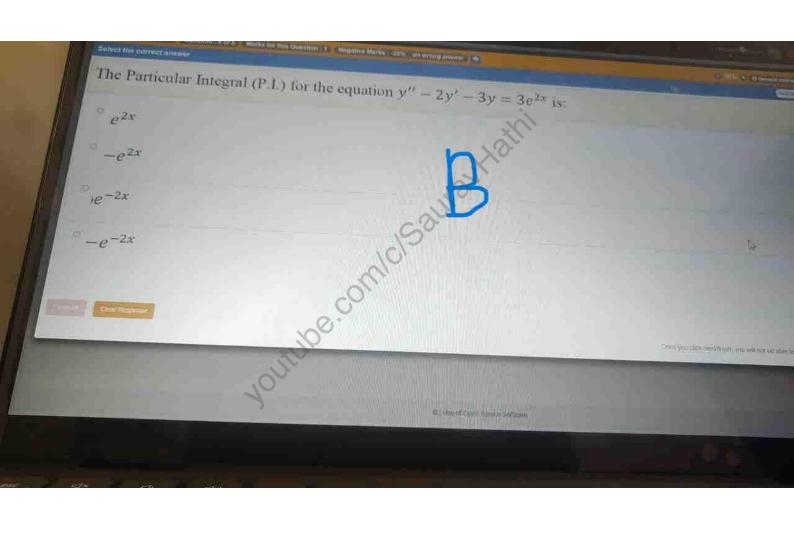
$$(6D+3)y_1 + (5D+1)y_2 = e^x, -5y_1 + (D+3)y_2 = 0$$

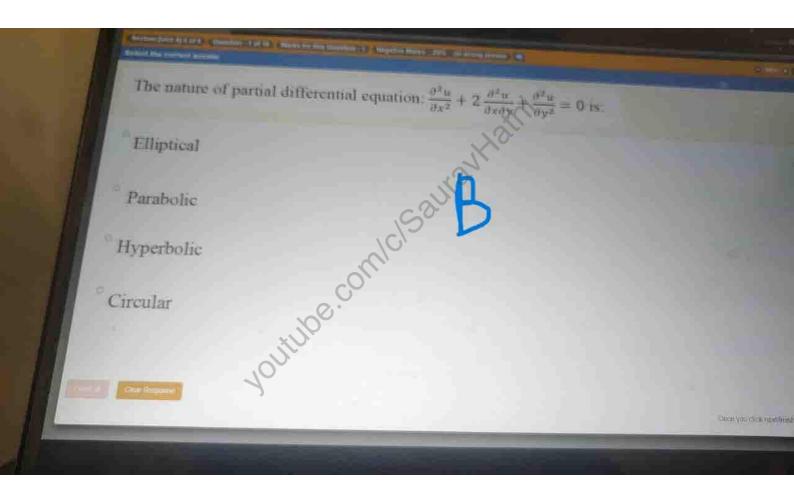
$$(6D+3)y_1 + (5D+1)y_2 = 0, -5y_1 + (D+3)y_2 = e^x$$

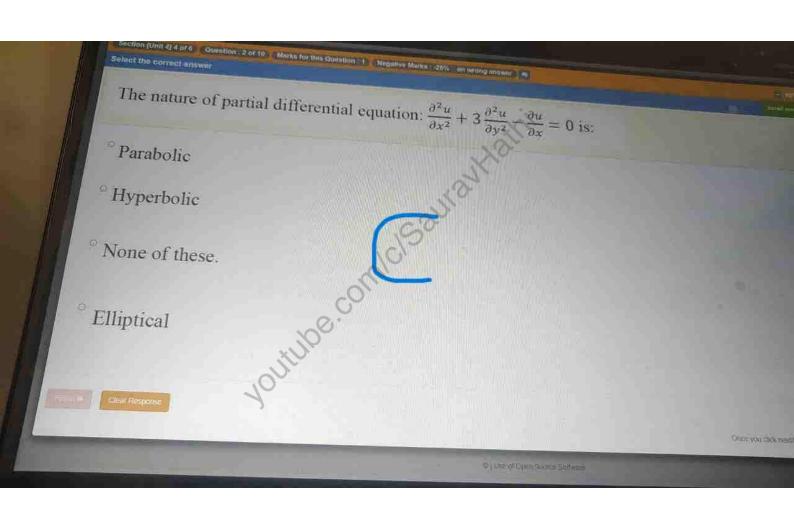
$$(6D+3)y_1 + (5D+1)y_2 = 0, -5y_1 + (D+3)y_2 = 0$$

$$(6D-3)y_1 + (5D-1)y_2 = 0,5y_1 + (D-3)y_2 = e^x$$

$$(6D-3)y_1 + (5D-1)y_2 = 0.5y_1 + (D-3)y_2 = e^x$$





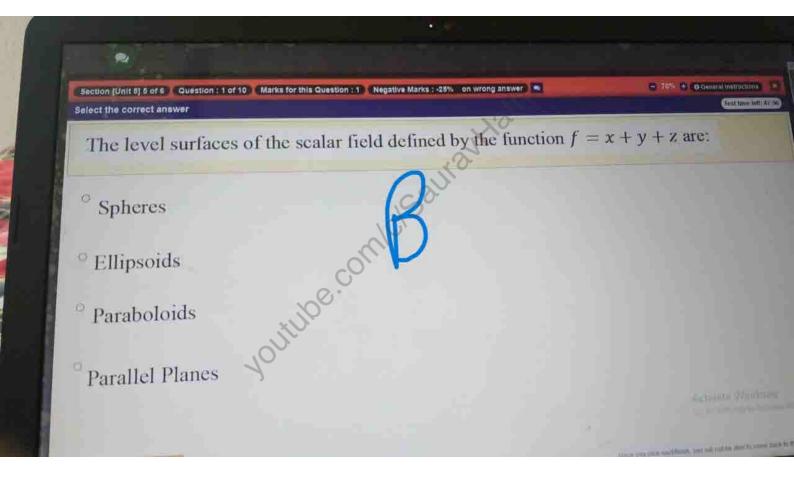


Which of the following is the solution of wave equation?

$$(c_1e^{px} + c_2e^{-px})(c_3e^{cpt} + c_4e^{-cpt})$$

 $(c_1e^{px} + c_2e^{-px})(c_3e^{cpt} + c_4e^{-cpt})$ $(c_1\cos px + c_2\sin px)(c_3\cos cpt + c_4\sin cpt)$ $(c_1x + c_2)(c_3t + c_4)$ All of these

$$(c_1x + c_2)(c_3t + c_4)$$



⊕ 50°

The partial differential equation corresponding to the function:

$$Z = (x + a)(y + b)$$
 where a and b are arbitrary constants and

$$\frac{\partial z}{\partial x} = p$$
 and $\frac{\partial z}{\partial y} = q$ is:

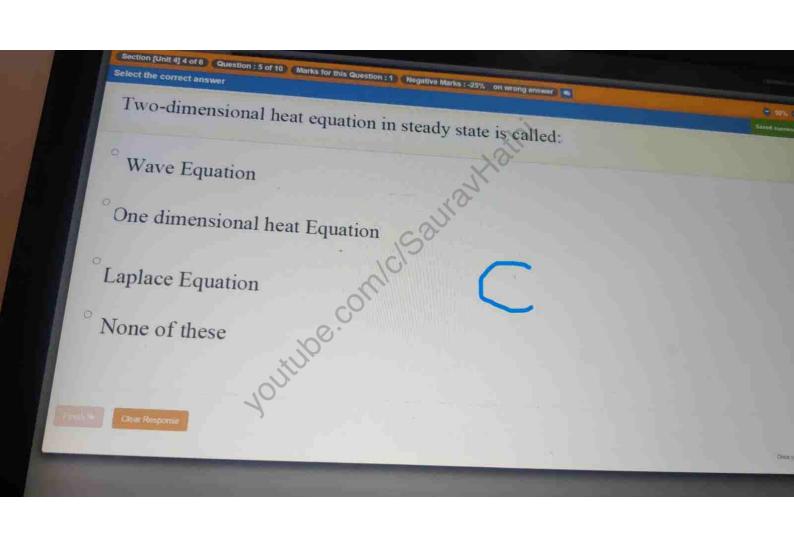
$$^{\circ}$$
 $z = pq$

$$z = p + q$$

$$z = p - q$$

$$z = p/q$$

Journo conde



The partial differential equation corresponding to the function: $Z = f\left(\frac{x}{y}\right)$ where

$$\frac{\partial z}{\partial x} = p$$
 and $\frac{\partial z}{\partial y} = q$ is:

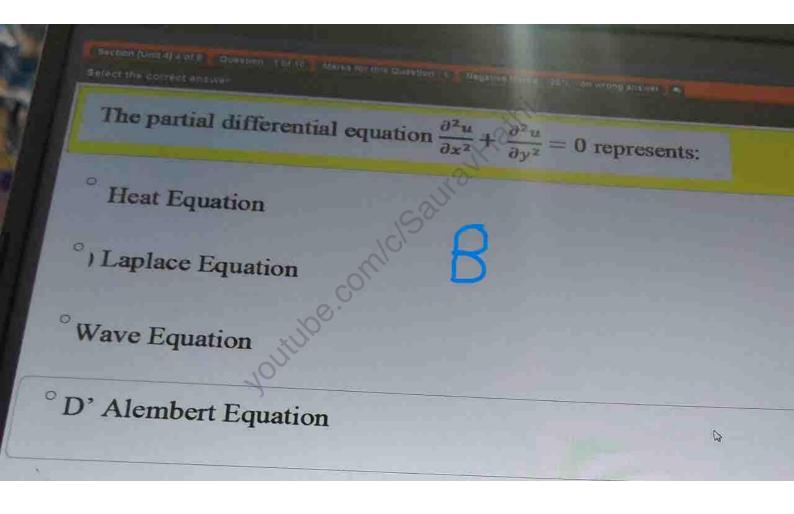
$$^{\circ}px = qy$$

$$^{\circ}$$
 $px + qy = 0$

$$py = qx$$

$$py + qx = 0$$

youtube comicisally



Section (Unit 4) 4 of 8 Question : 6 of 10 Marks for this Question : 1 Negative Marks : -25% on wrong answer 6



Which of the following solution of heat equation is used to solve the problem related to conduction of heat?

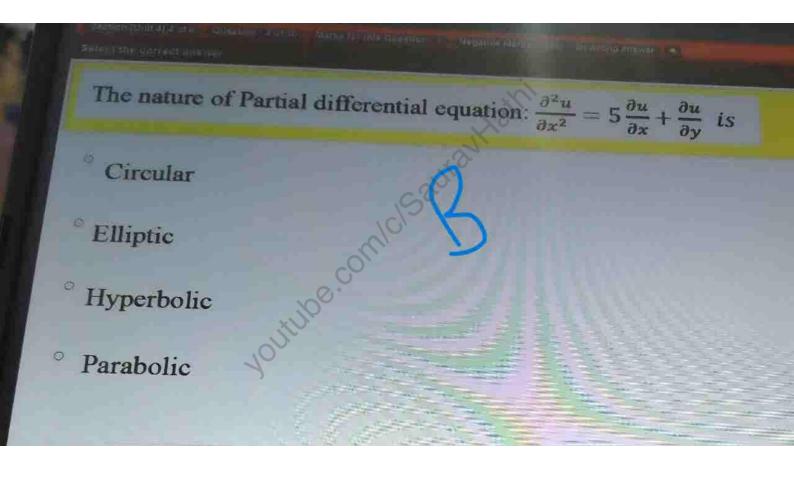
$$u(x,t) = (A\cos pt + B\sin pt)e^{-c^2p^2t}$$

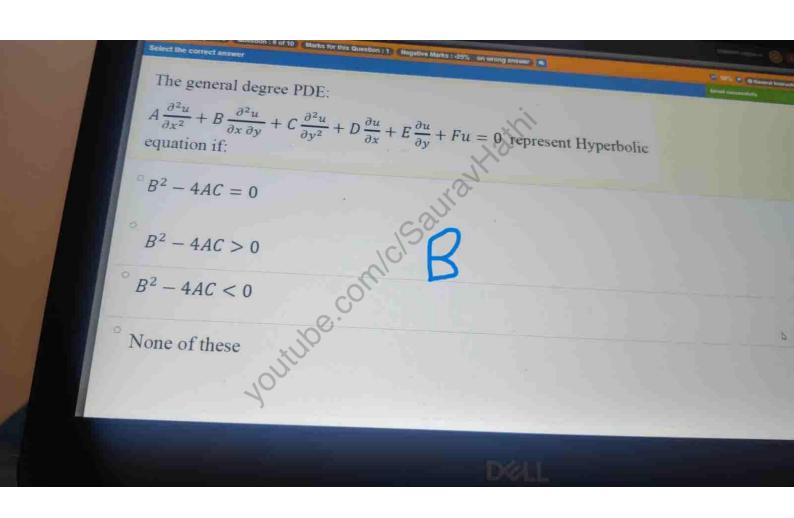
$$u(x,t) = (A\cos px + B\sin px)e^{c^2p^2t}$$

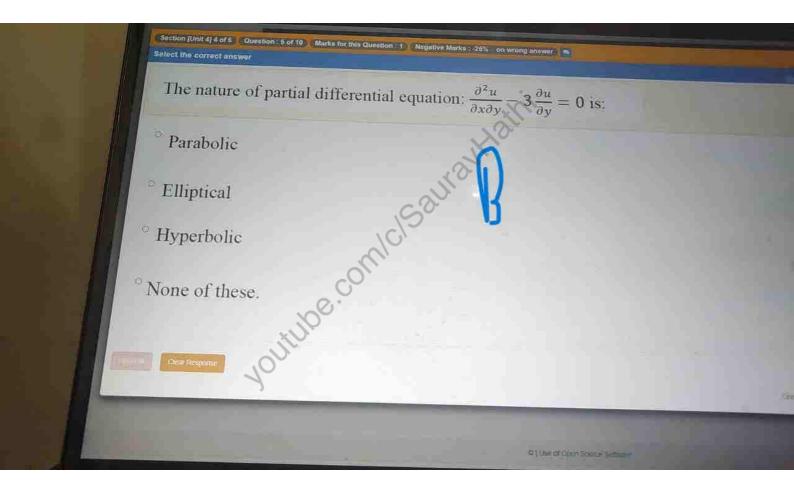
$$u(x,t) = (A\cos px + B\sin px)e^{-c^2p^2}$$

$$u(x,t) = (A\cos px + B\sin px)e^{-c^2p^2t}$$









Which of the following solution of heat equation is used to solve the problem related to conduction of heat?

$$u(x,t) = (A\cos pt + B\sin pt)e^{-c^2p^2t}$$

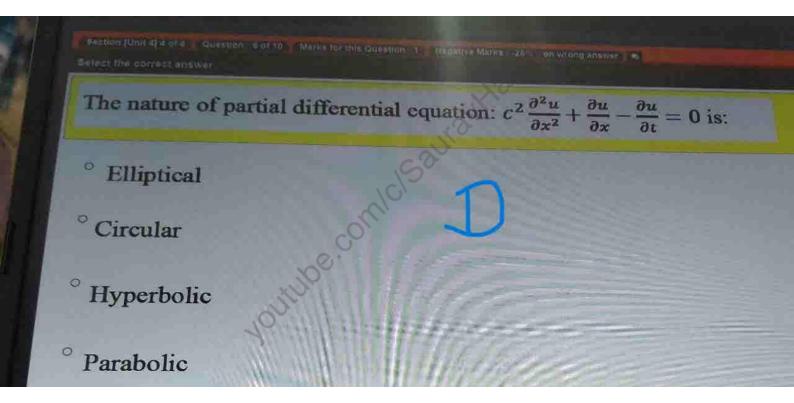
$$u(x,t) = (A\cos px + B\sin px)e^{c^2p^2t}$$

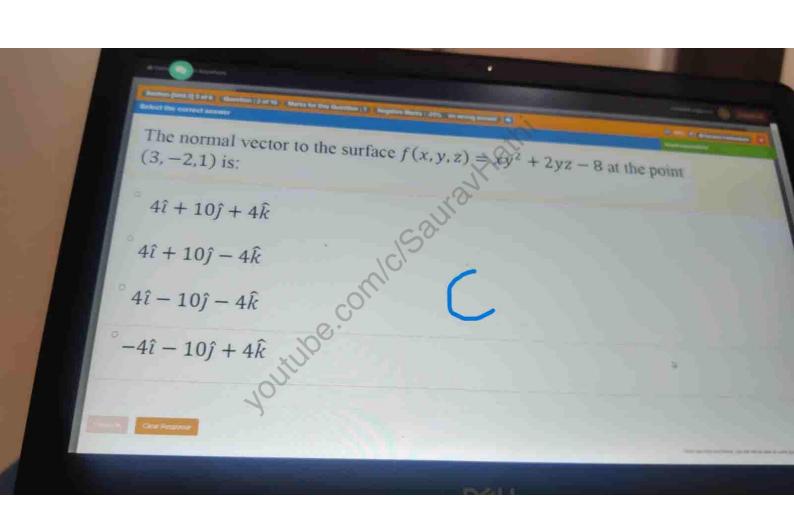
$$u(x,t) = (A\cos px + B\sin px)e^{-c^2p^2}$$

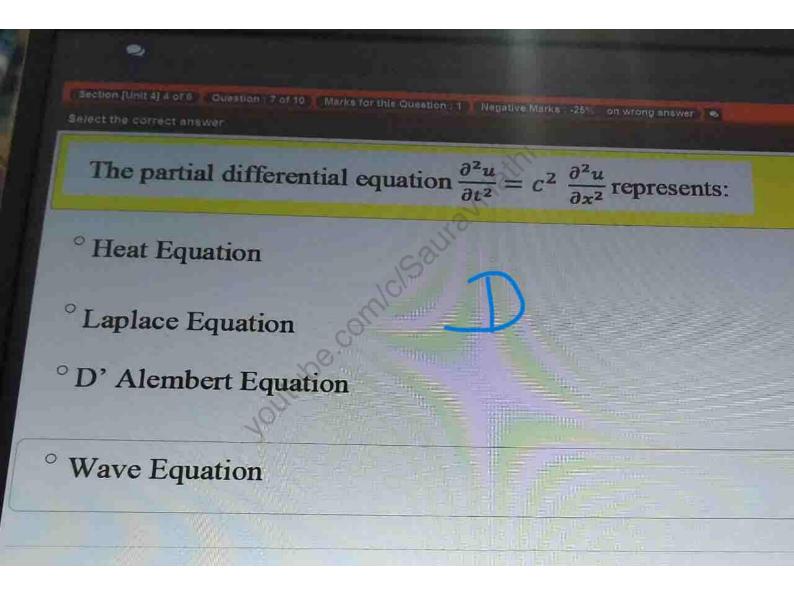
$$u(x,t) = (A\cos px + B\sin px)e^{-c^2p^2t}$$

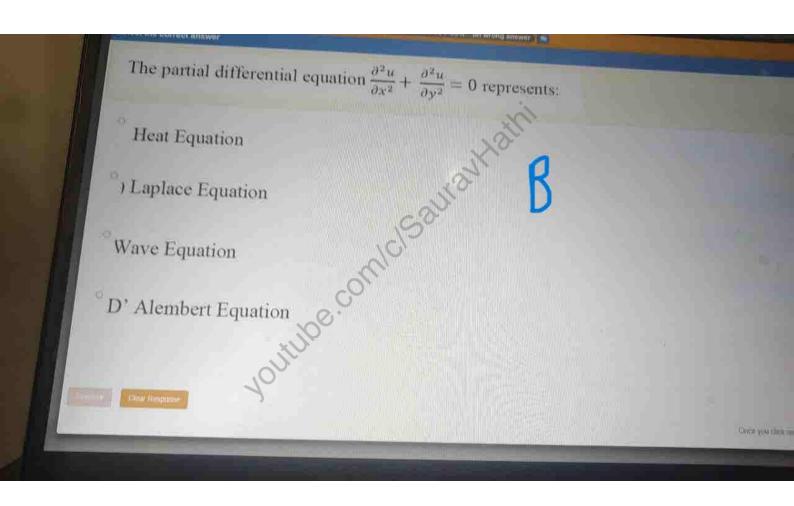


Сігалітеропал.









The del operator, denoted as $\vec{\nabla}$, is defined as:

$$\vec{\nabla} = \hat{\imath} \frac{\partial}{\partial x} + \hat{\jmath} \frac{\partial}{\partial y} + \hat{k} \frac{\partial}{\partial z}$$

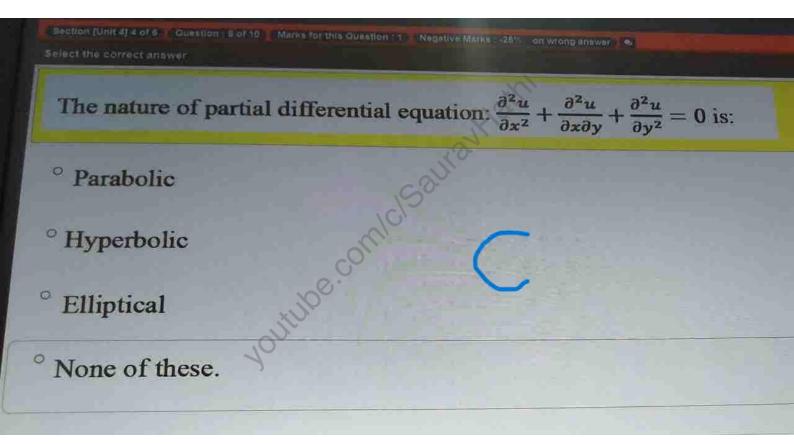
$$\vec{\nabla} = \hat{\imath} \frac{\partial}{\partial x} - \hat{\jmath} \frac{\partial}{\partial y} + \hat{k} \frac{\partial}{\partial z}$$

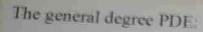
$$\vec{\nabla} = \hat{\imath} \frac{\partial}{\partial x} + \hat{\jmath} \frac{\partial}{\partial y} - \hat{k} \frac{\partial}{\partial z}$$

$$\vec{\nabla} = \hat{\imath} \frac{\partial}{\partial x} - \hat{\jmath} \frac{\partial}{\partial y} + \hat{k} \frac{\partial}{\partial z}$$

$$\vec{\nabla} = \hat{\imath} \frac{\partial}{\partial x} + \hat{\jmath} \frac{\partial}{\partial y} - \hat{k} \frac{\partial}{\partial z}$$

$$\vec{\nabla} = \hat{\imath} \frac{\partial}{\partial x} - \hat{\jmath} \frac{\partial}{\partial y} - \hat{k} \frac{\partial}{\partial z}$$





A
$$\frac{\partial^2 u}{\partial x^2} + B \frac{\partial^2 u}{\partial x \partial y} + C \frac{\partial^2 u}{\partial y^2} + D \frac{\partial u}{\partial x} + E \frac{\partial u}{\partial y} + Fu = 0$$
 represent Hyperbolic equation if:

B² - 4AC = 0

B² - 4AC < 0

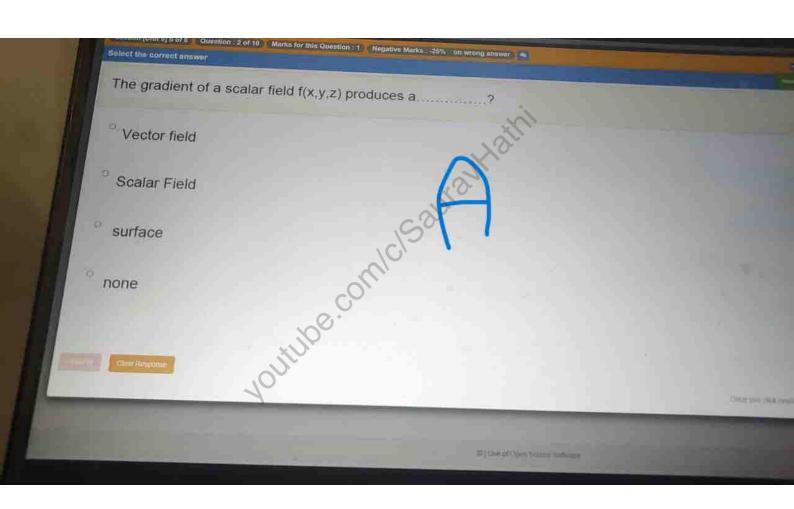
None of these

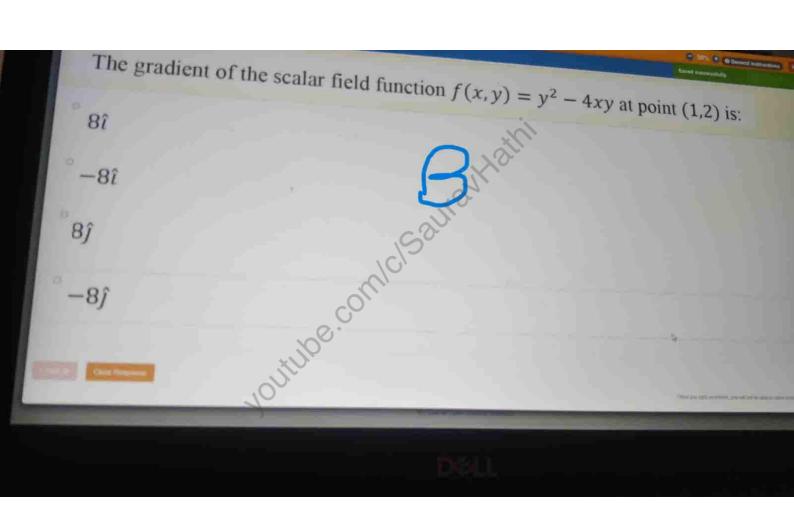
$$^{\circ}B^2 - 4AC = 0$$

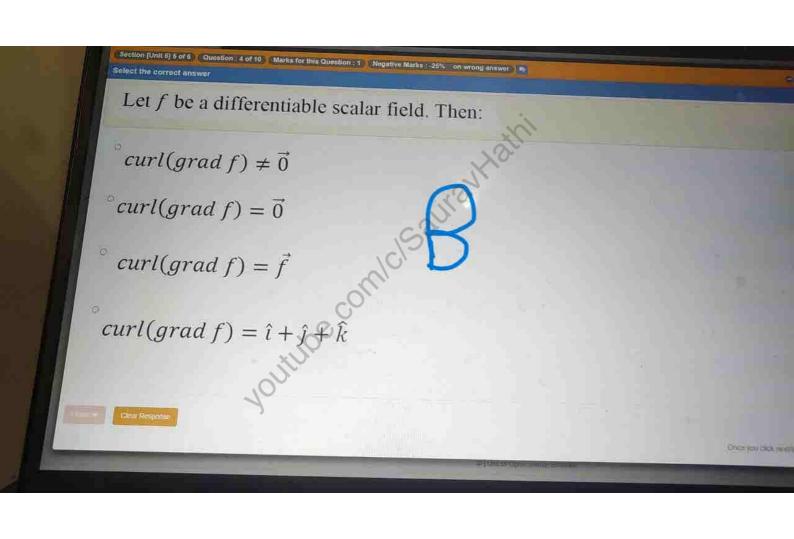
$$B^2 - 4AC > 0$$

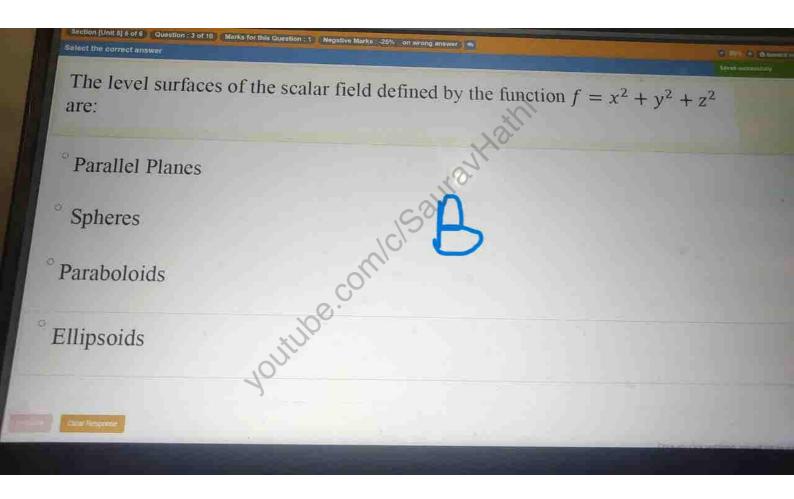
$$^{\circ}B^2-4AC<0$$

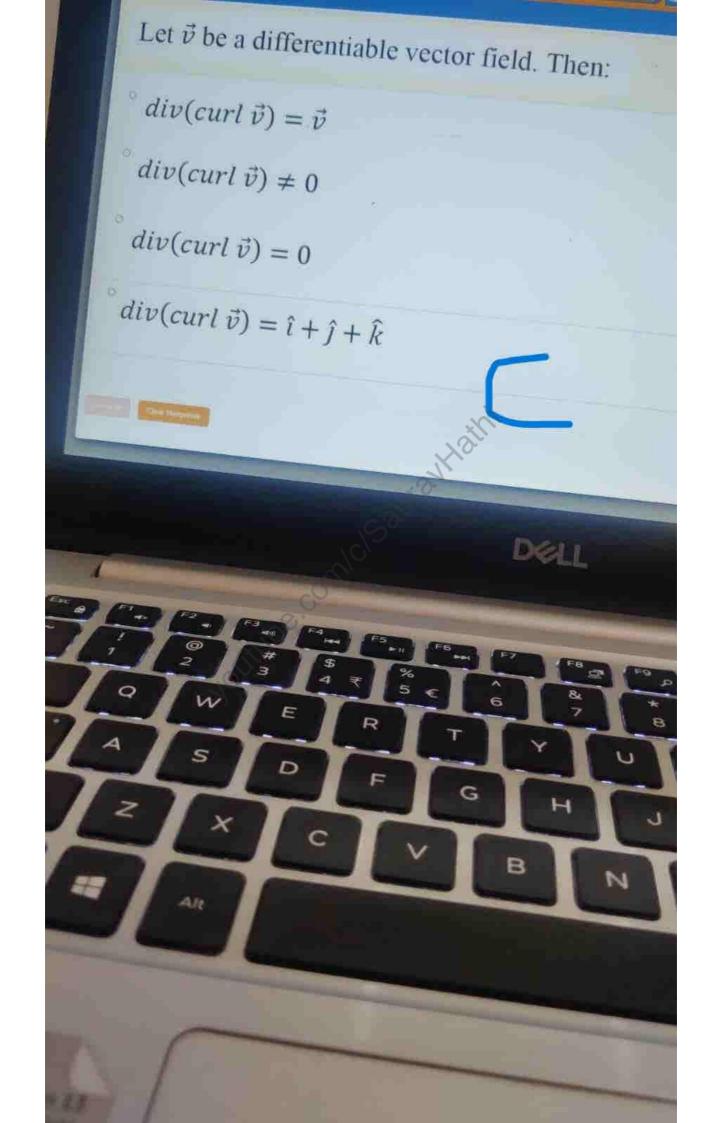
None of these

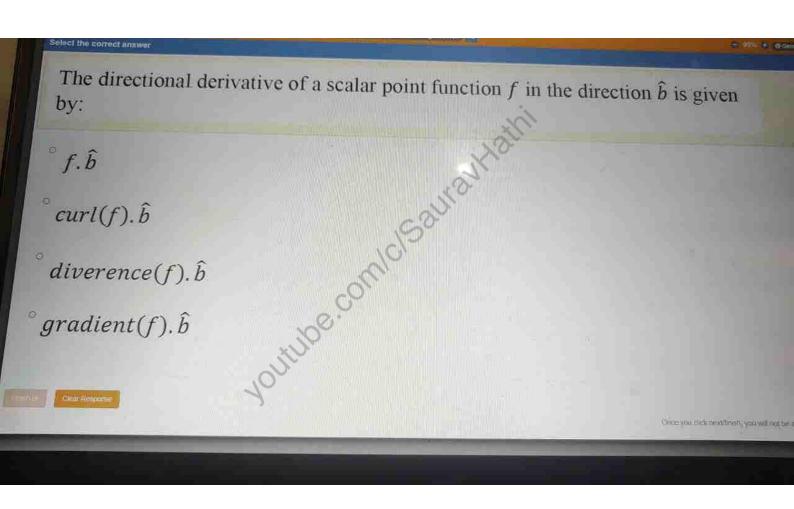


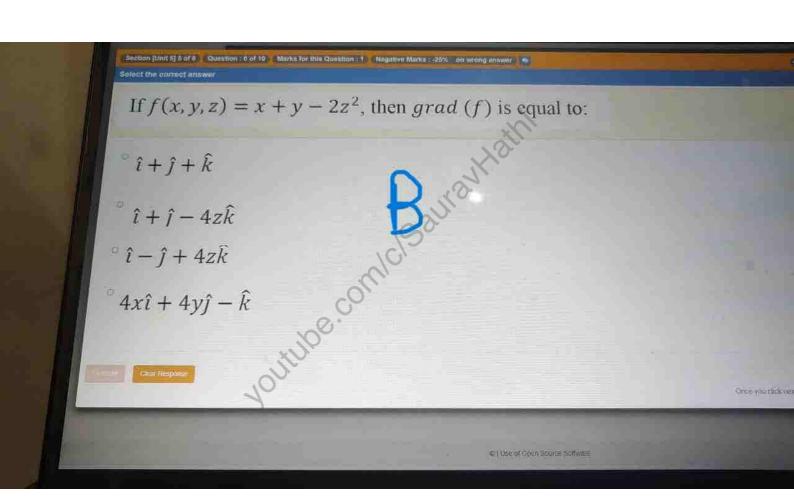


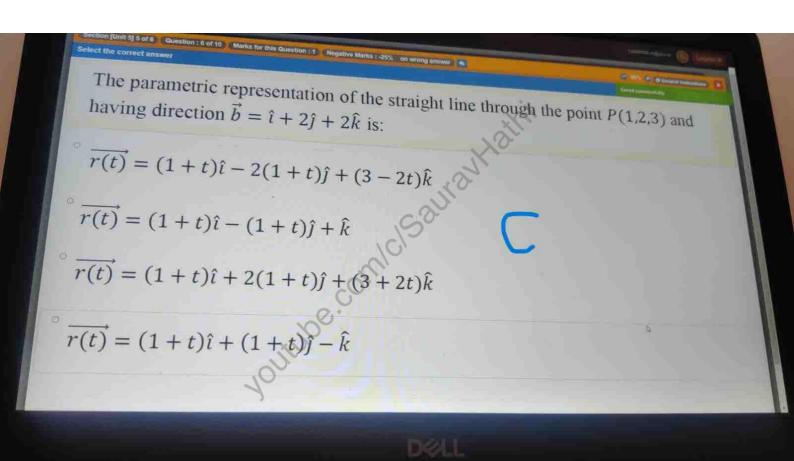


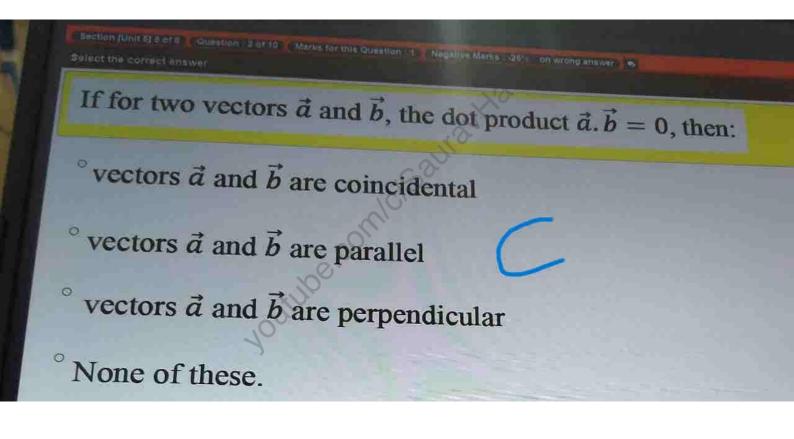




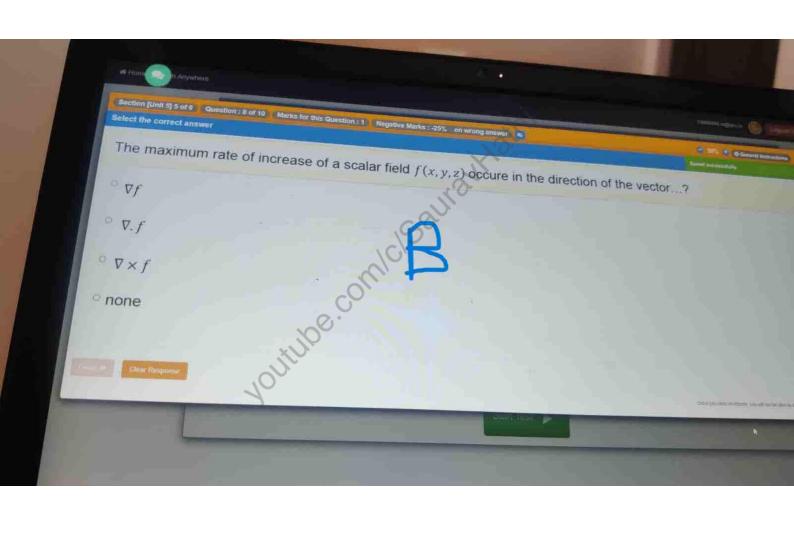


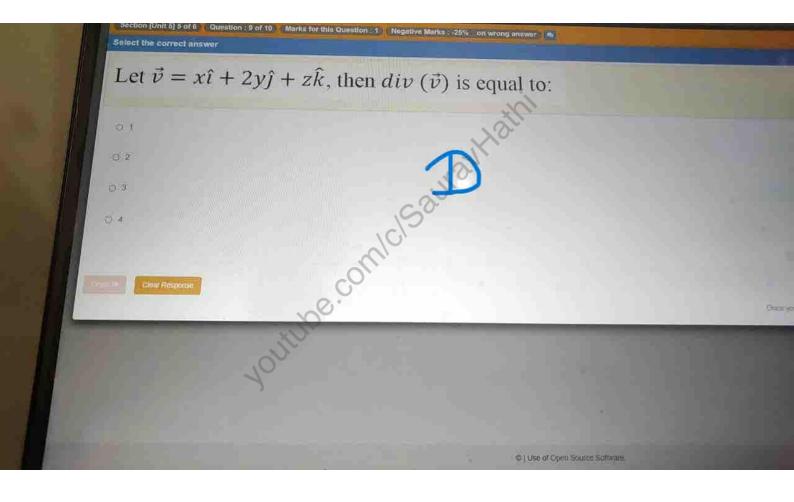


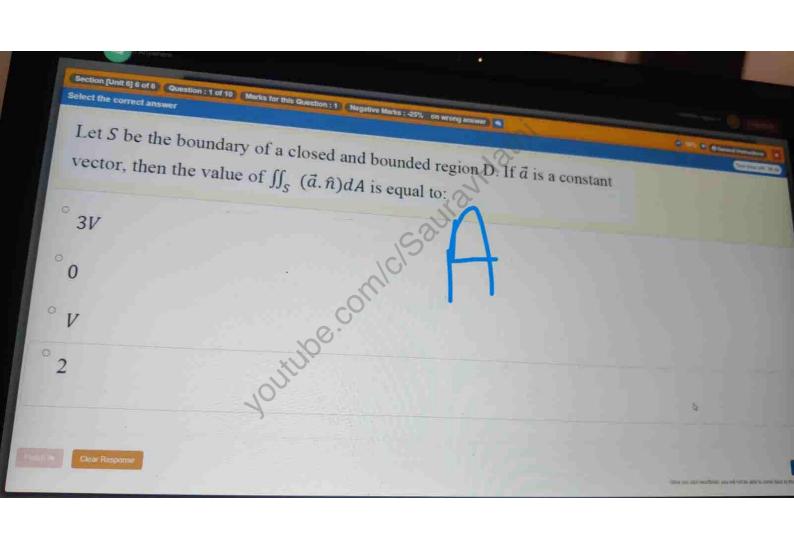


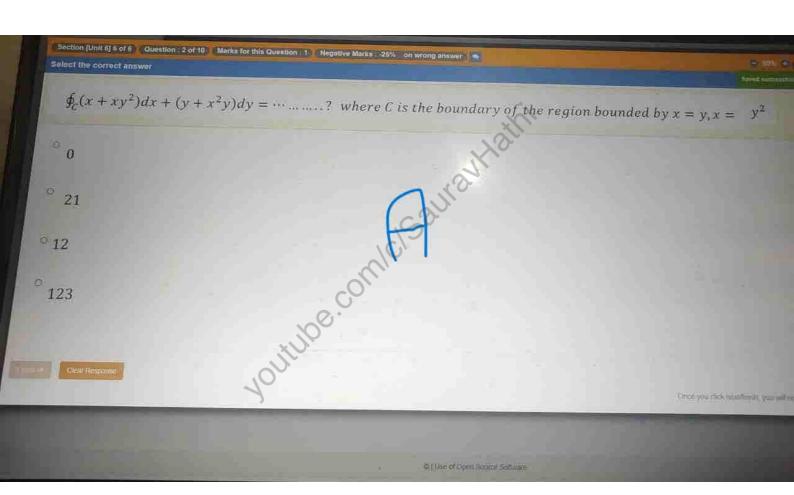


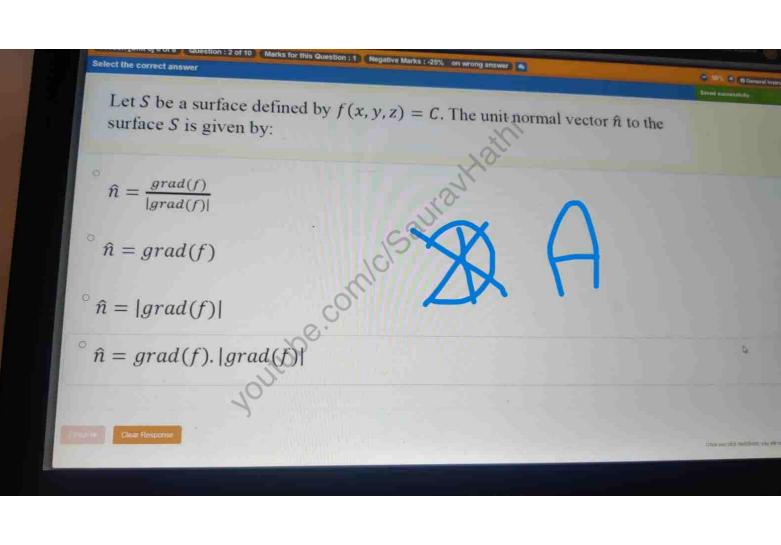












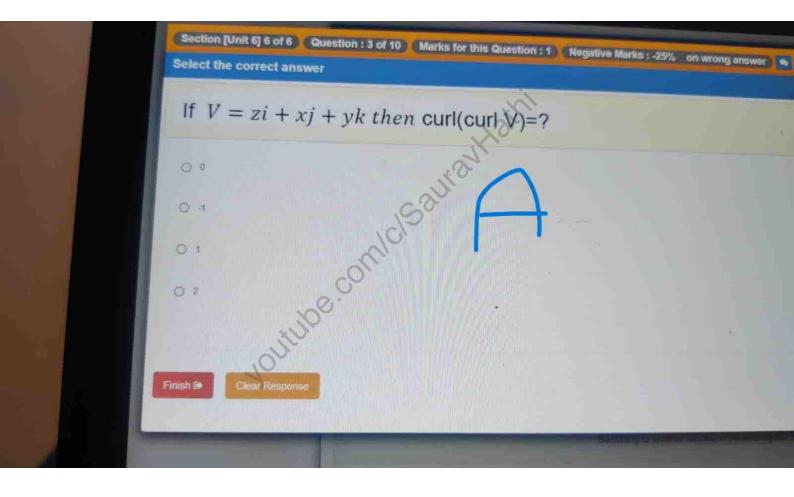
$$\frac{\partial f}{\partial x} = \frac{\partial g}{\partial y}$$

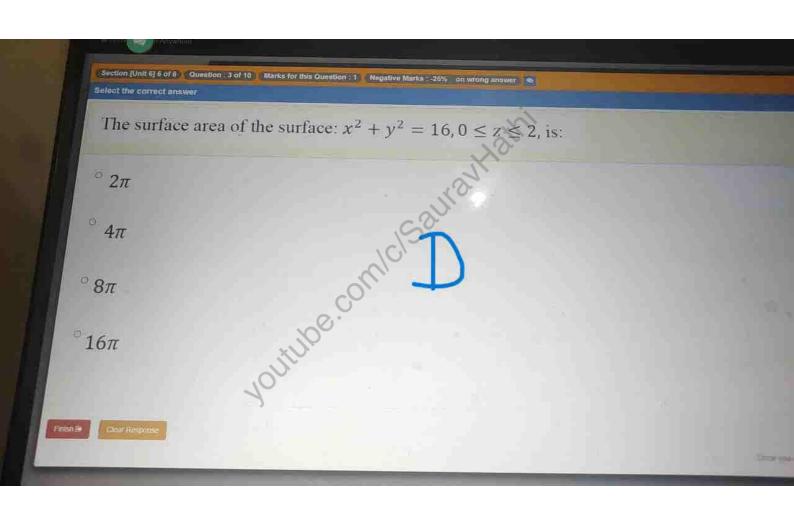
$$\frac{\partial f}{\partial y} = \frac{\partial g}{\partial x}$$

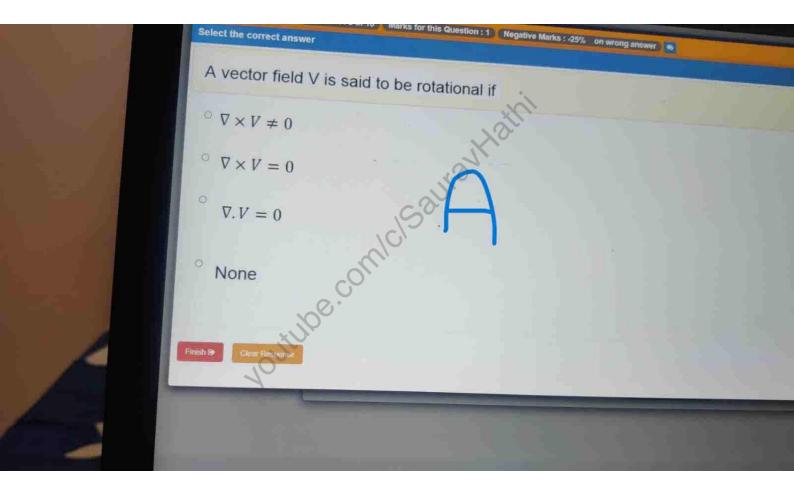
$$\frac{\partial f}{\partial x} + \frac{\partial g}{\partial y} = 0$$

$$\frac{\partial f}{\partial y} + \frac{\partial g}{\partial x} = 0$$

Jolithoe coulc







The line integral $\int_C f(x, y, z) ds$ of function f(x, y, z) which is continuous over the simple smooth curve $C(x(t), y(t), z(t)), a \le t \le b$, with respect to the arc

$$\int_{a}^{b} f(x(t), y(t), z(t)) \sqrt{\left(\frac{dx}{dt}\right)^{2} + \left(\frac{dy}{dt}\right)^{2} + \left(\frac{dz}{dt}\right)^{2}} dt$$

$$\int_{a}^{b} f(x(t), y(t), z(t)) dt$$

$$\int_{a}^{b} \sqrt{\left(\frac{dx}{dt}\right)^{2} + \left(\frac{dy}{dt}\right)^{2} + \left(\frac{dz}{dt}\right)^{2}} dt$$

$$\int_{a}^{b} f(x(t), y(t), z(t)) dt$$

$$\int_{a}^{b} \sqrt{\left(\frac{dx}{dt}\right)^{2} + \left(\frac{dy}{dt}\right)^{2} + \left(\frac{dz}{dt}\right)^{2}} dt$$

None of these.