

Started on

Thursday, 29 February 2024, 2:21 PM

State

⇔ Finished

Completed on

Saturday, 9 March 2024, 7:00 AM

Time taken

© 8 days 16 hours

Grade

2 10.00 out of 10.00 (100%)

Question 1 Mark 1.00 out of 1.00 Complete

Find the general solution for the differential equation.

$$\frac{\mathrm{dy}}{\mathrm{dx}} = y^2 (4 - \mathrm{e}^x)$$

$$A. \quad y = \frac{k}{4x - e^X}$$

B.
$$y = \frac{1}{e^{x} - 4x + C}$$

C.
$$y = 4x - e^x + C$$

D.
$$y = \sqrt[3]{\frac{3}{4x - e^x + C}}$$

Solve $(e^{2y} - y \cos xy) dx + (2xe^{2y} - x \cos xy + 2y) dy = 0$.

$$c. xe^{3y} - cosxy + y^2 + c = 0$$

$$\bigcirc a \quad xe^{2y} - sinxy + y^3 + c = 0$$

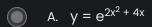
Solve

$$xy\,dx + (2x^2 + 3y^2 - 20)\,dy = 0$$

Find the particular solution for the initial value problem.

$$(4x + 4)y = \frac{dy}{dx}; y(0) = 1$$

Select one:



B.
$$y = e^{2x^2 + 4x + 1}$$

C.
$$y = e^{4x^2 + 4x}$$

D.
$$y = e^{4x^2 + 4x} + 1$$

Question 5

Complete

Mark 1.00 out of 1.00

Find the particular solution for the initial value problem.

$$x \frac{dy}{dx} = 4x^2 e^{2x}; y(0) = 16$$

A.
$$y = 2xe^{2x} + 16$$

B.
$$y = 4xe^{2x} - e^{2x} + 17$$

C.
$$y = 2xe^{2x} - e^{2x} + 17$$

D.
$$y = 4xe^{2x} - 2e^{2x} + 18$$

Find the general solution for the differential equation.

$$x^2 \frac{dy}{dx} + xy = 4x^4 + 7x^7, x > 0$$

Select one:

A.
$$y = x^4 + x^7 + \frac{C}{x}$$

B.
$$y = x^4 + x^7 + C$$

C.
$$y = x^3 + x^6 + \frac{C}{x}$$

D.
$$y = k \left(x^3 + x^6 + \frac{1}{x} \right)$$

Question 7

Complete

Mark 1.00 out of 1.00

Solve the differential equation subject to the initial condition.

$$x \frac{dy}{dx} + (1 + x)y = 1; y(5) = 2$$

A.
$$y = \frac{1 + 9e^{5 - x}}{x}$$

B.
$$y = \frac{1 + 11e^{7 - x}}{x}$$

c.
$$y = \frac{1 + 9e^{-5 - x}}{x}$$

D.
$$y = \frac{1 + 10e^{5-x}}{x}$$

Solve the differential equation subject to the initial condition.



$$\frac{dy}{dx}$$
 + 10xy - e^{-5x²} = 0; y(0) = 4

Select one:



A.
$$y = (x + 4)e^{-5x}$$



B.
$$y = xe^{-5x} + 4$$

C.
$$y = (x + 4)e^{-5x^2}$$



D.
$$y = xe^{-5x^2} + 4$$

Question 9

Complete

Mark 1.00 out of 1.00

Solve the differential equation.

$$-x^3y' + 2x^2y = y^2$$



$$y = \frac{x^2}{\ln x - C}$$



3.
$$y = \frac{x^2}{\ln x + 0}$$



$$y = \frac{x}{\ln x + C}$$

$$y = \frac{x}{\ln x - C}$$

Solve the differential equation.

$$3x^2y' - 2xy = y^{-3}$$

Select one:

- A. $y^4 = \frac{-4}{11x} + Cx^{11/3}$
- B. $y^2 = \frac{-4}{11x} + Cx^{11/3}$
- D. $y^2 = \frac{-4}{11x} + Cx^{8/3}$

Finish review

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Jump to...







On the lands that we study, we walk, and we live, we acknowledge and respect the traditional custodians and cultural knowledge holders of these lands.

University of Wollongong

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