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NPTEL

Unit 1 - How to access the portal

Assignment 0

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2018-07-30, 23:59 IST.

1) ***1 point***

Let $z = f(x, y)$. Then the general solution of the partial differential equation

$$\frac{\partial^2 z}{\partial x \partial y} = \frac{1}{xy^2} - \frac{2x}{y}$$

is

- $z = -\frac{1}{y}\ln x - x^2 \ln y + \phi(y) + \psi(x)$
- $z = -\frac{1}{y^2}\ln x - \frac{x^2}{y} + \phi(y)$
- $z = -\frac{1}{xy} - 2x \ln y + \psi(x)$
- $z = -\frac{1}{y}\ln x - x^2 \ln y + \phi(y)$

No, the answer is incorrect.
Score: 0

Accepted Answers:

$z = -\frac{1}{y}\ln x - x^2 \ln y + \phi(y) + \psi(x)$

2) *The general solution of the differential equation* ***1 point***

$\frac{dy}{dx} + y \sin x = (e^{-\cos x})y^2$ *is*

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$e^{-\cos x}y = -x + c$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$e^{\cos x}\ \frac{1}{y} = -x + c$

3) *Let* $z = f(x, y),\ p = \frac{\partial z}{\partial x}$ *and* $q = \frac{\partial z}{\partial y}$. **1 point**

The partial differential equation obtained by eliminating the arbitrary constants a *and* b *from the equation*

$2z = (ax + y)^2 + b$ *is*

$py + qx = p^2$

$x + qy = p^2$

$px + qy = q^2$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$px + qy = q^2$

4) **1 point**

Eliminating the arbitrary function f *from the equation* $z = f(x^2 - y^2)$, *we get*

$4xp + yq = 0$

$yp + xq = 0$

$p + qx = 0$

$py + q = 0$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$yp + xq = 0$

5) *The number of solution of differential equation* **1 point**

$xy' = y - 1,\ y(0+) = 1$ *is*

only one

exactly two

infinite

zero

No, the answer is incorrect.
Score: 0

Accepted Answers:
$infinite$

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