

VU QUIZ REPORT

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Subject: MTH401

Quiz Completed: 1/8/2026, 1:31:17 PM

Total Questions: 9

Mathematical Questions: 4

CROPPED Screenshots: 4

Question 1:

Question # 1 of 10 (Start time: 01:25:30 PM, 08 January 2026)

Total Marks: 1

A second order differential equation of the form

$$x^2 \frac{d^2 y}{dx^2} + x \frac{dy}{dx} + (x^2 - v^2)y = 0$$

is called _____ differential equation.

Select the correct option

 Reload Math Equations

☐	Bessel
☐	Picard
☐	Legendre
☐	Bernoulli

You selected: A

Mathematical question (CROPPED screenshot - top 20% removed)

Selected Answer: A

Question 2:

Operator method is based on process of

- A. Addition of dependent variables.
- B. None of these.
- C. Elimination of dependent variables.**
- D. Obtaining new dependent variables.

Selected Answer: C

Question 3:

The method of Frobenius always provide two solutions.

- A. True
- B. False
- C. Option C not found
- D. Option D not found

Selected Answer: B

Question 5:

Question # 5 of 10 (Start time: 01:29:09 PM, 08 January 2026)Total Marks: 1

By converting the equation
into general form
∴ Q(x) is

$$(x^2 + 4x + 4)y'' + (x - 2)y' + y = 0$$
$$y'' + P(x)y' + Q(x)y = 0$$

Select the correct option

☐None of these.

☐ $\frac{1}{(x - 2)(x + 2)}$

☐ $\frac{1}{(x + 2)^2}$

Reload Math Equations

You selected: C

Mathematical question (CROPPED screenshot - top 20% removed)

Selected Answer: C

Question 6:

Question # 6 of 10 (Start time: 01:29:30 PM, 08 January 2026)Total Marks: 1

The equation, $(1 - x^3)\frac{d^2y}{dx^2} - 2x\frac{dy}{dx} + 30y = 0$, has the singular point(s) at $x =$ _____.

Select the correct option

☐ $(II) \quad i$

☐ $(I) \quad \pm 1$

☐ $(IV) \quad \text{Both (II) and (III).}$

☐ $(III) \quad -i$

Reload Math Equations

You selected: B

Mathematical question (CROPPED screenshot - top 20% removed)

Selected Answer: B

Question 7:

Question # 7 of 10 (Start time: 01:28:57 PM, 08 January 2026)

Total Marks: 1

The Legendre polynomials can also be generated by Rodrigues formula, $P_n(x) = \frac{1}{2^n n!} \frac{d^n}{dx^n} (x^2 - 1)^n$.

Select the correct option

 Reload Math Equations

☐	False
☐	True

You selected: B

Mathematical question (CROPPED screenshot - top 20% removed)

Selected Answer: B

Question 8:

If n is positive integer, then the solution of Legendre's differential equation is called a Legendre's _____ of degree n .

A. function

B. polynomial

C. Option C not found

D. Option D not found

Selected Answer: B

Question 9:

The simultaneous ordinary differential equations involve two or more equations that contain derivatives of two or more unknown functions of _____ independent variable.

A. 2

B. infinite

C. 2

D. 1

Selected Answer: D

Question 10:

It is NOT always possible to solve the given system for the highest-order derivative of each dependent variable.

A. True

B. False

C. Option C not found

D. Option D not found

Selected Answer: A

Mathematical Questions Note:

Questions containing mathematical equations and symbols are displayed as CROPPED screenshots (top 20% removed for privacy) to preserve the original formatting. Your selected answers are displayed below each screenshot for easy reference.