Quiz Review Report

Name: Rohit Rana Subject: Calculus

Score: 0 / 10

Accuracy: 0.00%

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- 1. Evaluate the limit: $\lim (x->2) (x^2 + 3x 10) / (x 2)$
 - A) 7
 - B) 0
 - C) Undefined
 - D) 1

Yogr Answer:

A

Correct Answer: 7

Explanation:

Factor the numerator as (x-2)(x+5). Cancel (x-2) and evaluate the limit of (x+5) as x approaches 2.

2. Find the derivative of $f(x) = \sin(2x) * \cos(x)$

A) $2\cos(2x)\cos(x) - \sin(2x)\sin(x)$

cos(2x)cos(x) - sin(2x)sin(x)

- C) $2\cos(2x)\cos(x) + \sin(2x)\sin(x)$
- D) $-2\cos(2x)\cos(x) \sin(2x)\sin(x)$

Your Answer: C

Correct Answer: 2cos(2x)cos(x) - sin(2x)sin(x)



Use the product rule: (uv)' = u'v + uv'. u = sin(2x), v = cos(x). u' = 2cos(2x), v' = -sin(x).

3. What is the integral of $+x^e^(x^2) dx$?

- A) $e^{(x^2)} + C$
- B) $0.5 * e^{(x^2)} + C$
- C) $2 * e^{(x^2)} + C$
- D) $x^2 * e^(x^2) + C$

Your Answer: B

Correct Answer: 0.5 * e^(x^2) + C

Explanation:

substitution.

integral

becomes 0.5 "+e^u du = 0.5 * e^u + C = 0.5



4. Find the critical points of the function $f(x) = x^3 - 6x^2 + 5$



4

B)
$$x = 2, x = 3$$

C)
$$x = -2$$
, $x = -3$

D)
$$x = 1, x = 5$$

Your Answer: B

Correct Answer: x = 0, x = 4

Explanation:

Find the derivative $f'(x) = 3x^2 - 12x$. Set f'(x) = 0 and solve for x: 3x(x-4) = 0, so x = 0 or x = 4.

5. Determine if the series " (n=1 to ") 1/

diverges.

- A) Converges
- B) Diverges

C) Cannot be determined

D) Oscillates

Your Answer: C

Correct Answer: Converges

Explanation:

This is a p-series with p = 2. A p-series converges if p > 1 and diverges if p <= 1. Since 2 > 1, the series converges.

6. What is the area between the curve y =

x^and the xaxis from x = 0 to x = 2?



D) 16/3

Your Answer: A Correct Answer: 8/3

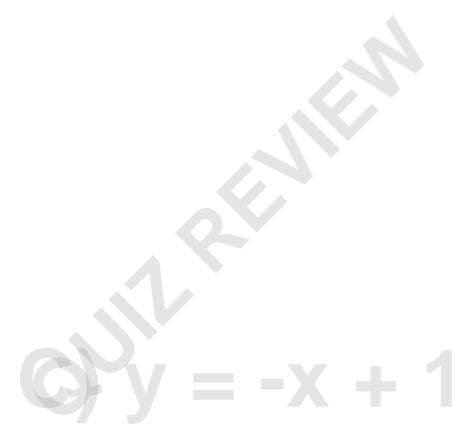
Explanation:

Integrate x^2 from 0 to 2: "+(0 to 2) x^2 dx = [$x^3/3$] from 0 to 2 = (8/3) - 0 = 8/3.

7. Find the equation of the tangent line to the curve $y = x^3 - 2x + 1$ at the point (1, 0).

A)
$$y = x - 1$$

B) $y = x + 1$



D) y = -x - 1

Your Answer: B

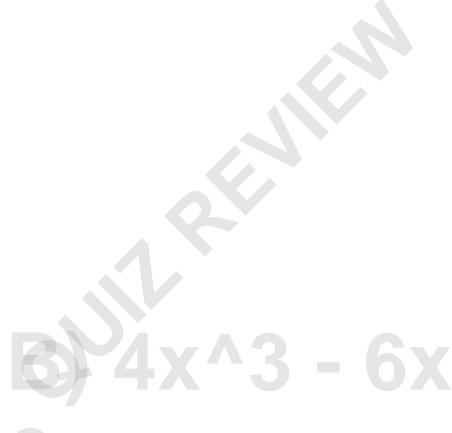
Correct Answer: y = x - 1

Explanation:

Find the derivative $y' = 3x^2 - 2$. Evaluate y' at x = 1: $y'(1) = 3(1)^2 - 2 = 1$. The tangent line has slope 1 and passes through (1, 0). Using point-slope form: $y - 0 = 1(x - 1) \Rightarrow y = x - 1$.

8. Find the second derivative of $f(x) = x^4 - 3x^2 + 2x - 5$

A) 12x^2 - 6



+ 2

C) 12x^2 - 6x

D) 4x^3 - 6

Your Answer: C

Correct Answer: 12x^2 - 6

Explanation:

First derivative: $f'(x) = 4x^3 - 6x + 2$. Second derivative: $f''(x) = 12x^2 - 6$.

9. Evaluate the definite integral: "+(0 to



A) 0

B) 1

C) -1

D) < ó

Your Answer: B

Correct Answer: 1

Explanation:

The integral of cos(x) is sin(x). Evaluate sin(x) from 0 to < o# sin(< <math>o"' O 6-af' = 1 - 0 = 1.

100Determine whether the function f(x) =

x^3+ sin(x) is even, odd, or neither.



D) Both

Your Answer: B

Correct Answer: Odd

Explanation:

A function is even if f(-x) = f(x) and odd if f(-x) = -f(x). $f(-x) = (-x)^3 + \sin(x) = -x^3 - \sin(x) = -(x^3 + \sin(x)) = -f(x)$. Therefore, the function is odd.