BRITISH COLUMBIA CALCULUS 12 (MCALC12) · BRITISH COLUMBIA

British Columbia Calculus 12 (MCALC12)
Practice Test

Unit B: Differentiation Rules

10 Questions

Original practice test based on the British Columbia curriculum. Work through each question, then check your answers at the end.

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

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Question 1

$\frac{d}{dx}\sin(x^2)$ is

A) $2x\cos(x^2)$

B) $\cos(x^2)$

C) $x\cos(x^2)$

D) $-2x\cos(x^2)$

Understand It with Pulse | Flag a mistake

Question 2

$\frac{d}{dx}e^{-x}$ is

A) e^{-x}

B) $-e^{-x}$

C) e^{x}

D) $-e^{x}$

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Question 3

$\frac{d}{dx}\tan x$ is

A) $\sec^2 x$

B) $\csc^2 x$

C) $-\sec^2 x$

D) $\tan^2 x$

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Question 4

$\frac{d}{dx}\ln(3x^2)$ is

A) $\frac{3}{x^2}$

B) $\frac{1}{x}$

C) $\frac{2}{x}$

D) $\frac{3}{x}$

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Question 5

For $x^3 + y^3 = 8$, the value of $\frac{dy}{dx}$ is

A) $-\frac{x^2}{y^2}$

B) $\frac{x^2}{y^2}$

C) $-\frac{y^2}{x^2}$

D) $\frac{y}{x}$

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Question 6

If $f(x) = \sin x$, then $f''(x)$ is

A) $\cos x$

B) $-\sin x$

C) $\sin x$

D) $-\cos x$

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Question 7

If $f(x) = x^3 + 2x$, then $f''(2)$ is

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Question 8

The tangent to $f(x) = x^2 - 4x$ is horizontal when x equals

A) 0

B) 4

C) 2

D) -2

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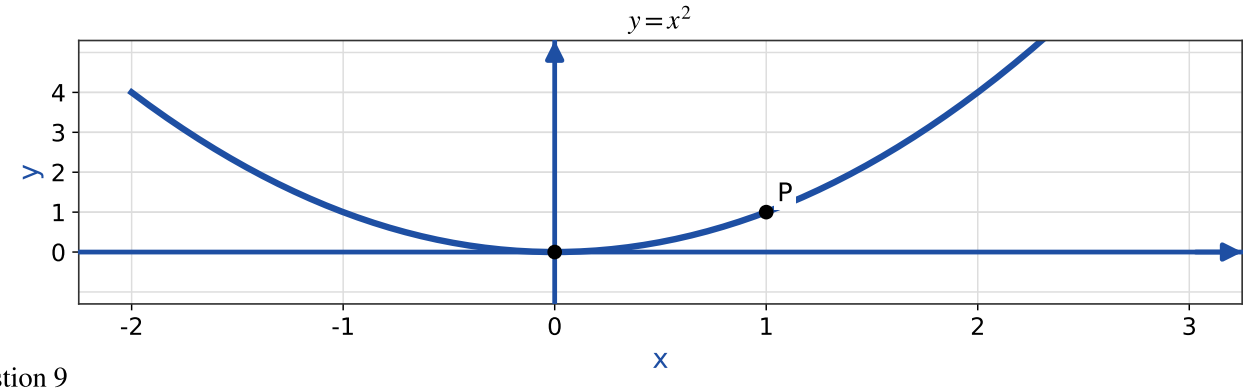

Question 9

For $y = x^2$, the slope of the normal line at the point $(1, 1)$ is

A) 2

B) $-\frac{1}{2}$

C) $\frac{1}{2}$

D) -2

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Question 10

If $f(x) = \sqrt{x^2 + 3}$, then $f'(1)$ is

A) 1

B) $\frac{1}{2}$

C) $\frac{1}{4}$

D) 2

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ANSWER KEY

1. A
2. B
3. A
4. C
5. A
6. B
7. 12
8. C
9. B
10. B

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