NUNAVUT MATH 31 · UNIT 2 · 10 QUESTIONS

Derivatives — Practice Test

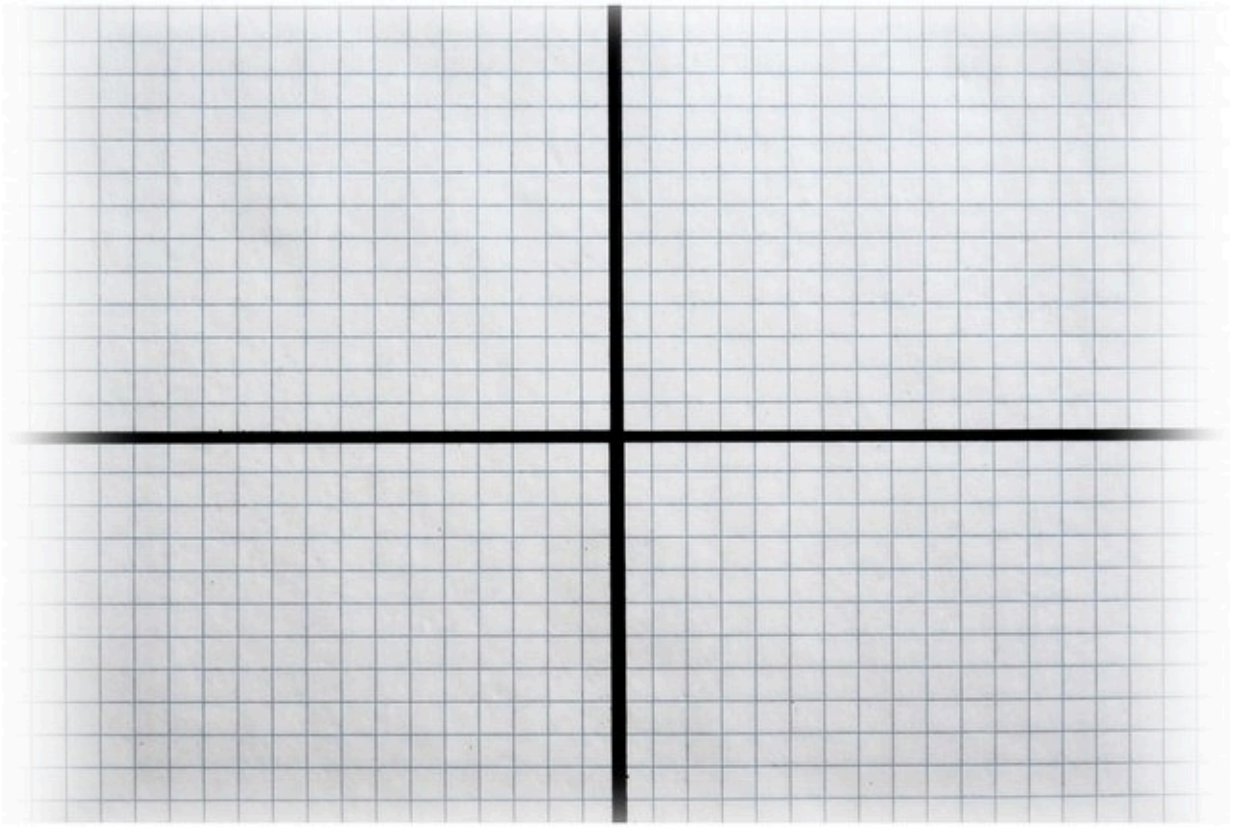
This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **If $f(x) = x\,e^x$, then $f'(x)$ is**

- A e^x
- B $x\,e^x$
- C $e^x\,(x + 1)$
- D $e^x\,(x - 1)$

Understand It with Pulse | Flag a mistake

2 If f(x) = sin x, then the value of $f'(\frac{\pi}{3})$, expressed as a decimal, is _____



ANSWER _____

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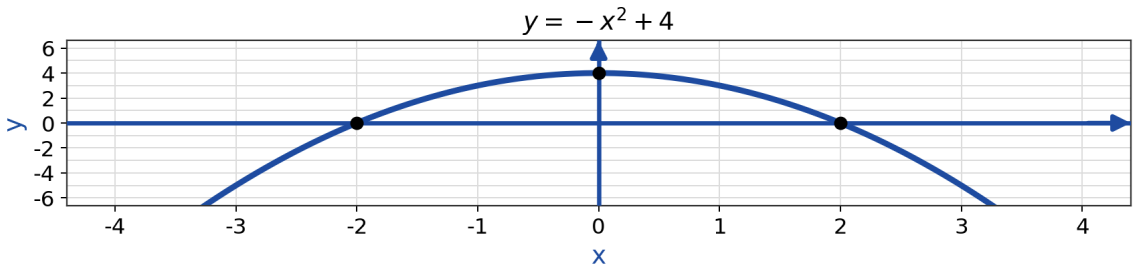
3 **The graph of f', the derivative of f, is shown. The function f is decreasing on the interval**



A (-2, 2)

B (-∞, -2) and (2, ∞)

C (2, ∞) only

D never

Understand It with Pulse | Flag a mistake

4 $\frac{d}{dx}[\ln(x^2 + 1)]$ is

A $\frac{1}{}$

B $\frac{x}{}$

C $\frac{2}{}$

D $\frac{2x}{}$

Understand It with Pulse | Flag a mistake

5 For the relation $x^2 - y^2 = 9$, $\frac{dy}{dx}$ is

A $-\frac{x}{}$

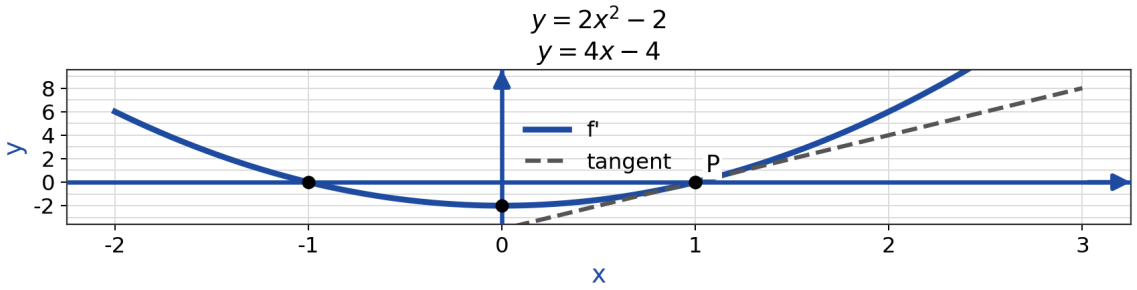
B $\frac{x}{}$

C $\frac{y}{}$

D $-\frac{y}{}$

Understand It with Pulse | Flag a mistake

6 **The graph of f' and the tangent line at P are shown. The value of f''(1) is _____**



ANSWER

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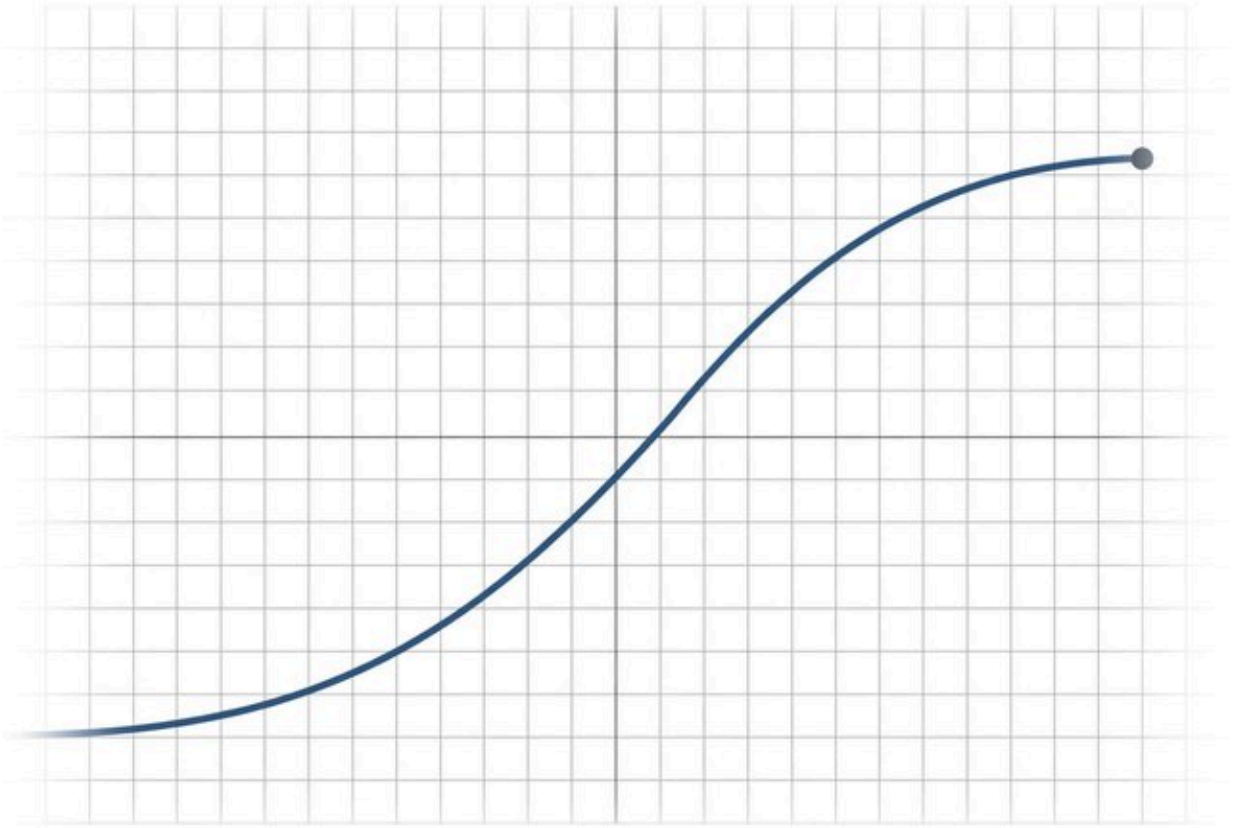
7 The value of $\lim_{h \to 0} \frac{\sqrt{9+h}-3}{h}$ is



A $\frac{1}{}$

B $\frac{1}{}$

C 3

D $\frac{1}{}$

Understand It with Pulse | Flag a mistake

8 $\frac{d}{dx}[\tan(2x)]$ is

A $\sec^2(2x)$

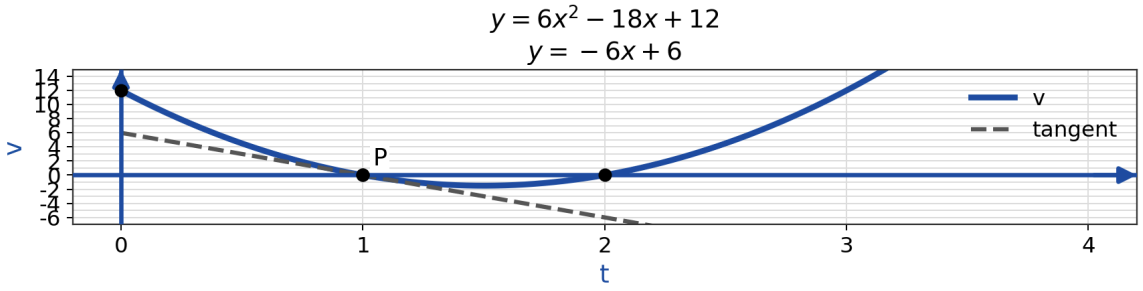
B $-\sec^2(2x)$

C $2\tan(2x)$

D $2\sec^2(2x)$

Understand It with Pulse | Flag a mistake

9 **The graph of the velocity of an object is shown, with the tangent line at P. The acceleration of the object at t = 1 s, in m/s², is _____**



ANSWER _____

Understand It with Pulse | Flag a mistake

10 If $f(x) = \frac{\ln x}{x}$, then $f'(x)$ is

A $1 + \ln x$

B $1 - \ln x$

C 1

D $\ln x$

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. C
2. 0.5
3. B
4. D
5. B
6. 4
7. A
8. D
9. -6
10. B

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