NORTHWEST TERRITORIES CALCULUS 12 (MCALC12) · UNIT C · 5 QUESTIONS

Applications of Differentiation — 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 **The critical points of $f(x) = 2x^3 - 3x^2 - 12x$ are**

- **A** $x = -1$ and $x = 2$
- **B** $x = 1$ and $x = -2$
- **C** $x = 0$ and $x = 2$
- **D** $x = -1$ and $x = -2$

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2 **Several stacks of gold coins of increasing height in a row on a wooden table. The function $f(x) = x^3 + 3x^2$ is increasing on**



A $x < -2$ or $x > 0$

B $-2 < x < 0$

C $x > -2$

D $x < 0$

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3 **The local maximum value of $f(x) = -x^3 + 3x$ is**

- **A** -2
- **B** 0
- **C** 2
- **D** 1

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4 **The inflection points of $f(x) = x^4 - 6x^2$ occur at**

- **A** $x = 0$
- **B** $x = \pm 1$
- **C** $x = \pm 2$
- **D** $x = \pm 3$

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5 **The maximum value of $f(x) = x^3 - 3x$ on $[-2, 2]$ is**

A 0

B -2

C 2

D 4

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ANSWER KEY

1. A
2. A
3. C
4. B
5. C

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