BRITISH COLUMBIA CALCULUS 12 (MCALC12) · UNIT D · 10 QUESTIONS

Integration and Applications — 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 $\frac{d}{dx}\int_1^x \cos t\,dt$ is

- A sin x
- B -sin x
- C -cos x
- D cos x

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2 $\frac{d}{dx}\int_0^{3x} t\,dt$ is

- A 3x
- B 9x
- C 6x
- D $\frac{9x^2}{2}$

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3 $\int_1^2 3x^2\,dx$ is

A 7

B 8

C 9

D 6

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4 The area under $y = 2x$ from $x = 0$ to $x = 3$ is

A 6

B 12

C 3

D 9

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5 The area between $y = 9 - x^2$ and the x-axis is

- A 18
- B 54
- C 36
- D 27

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6 The volume formed by rotating $y = x^2$, $0 \leq x \leq 1$, about the x-axis is

- A $\frac{\pi}{5}$
- B $\frac{\pi}{3}$
- C π
- D $\frac{2\pi}{5}$

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7 The volume formed by rotating $y = 2x$, $0 \le x \le 1$, about the x-axis is

- **A** π
- **B** $\frac{4\pi}{3}$
- **C** 2π
- **D** $\frac{\pi}{2}$

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8 $\int_{-1}^{2} (x + 2)\,dx$ is

- **A** $\frac{15}{2}$
- **B** $\frac{9}{2}$
- **C** 6
- **D** 9

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9 The graph shows $y = 2x$. The area under the curve from $x = 0$ to $x = 2$ is

- **A** 4
- **B** 2
- **C** 8
- **D** 6

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10 If $\int_5^2 f(x)\,dx = -7$, then $\int_2^5 f(x)\,dx$ is

- **A** -7
- **B** 7
- **C** 0
- **D** $\frac{1}{7}$

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ANSWER KEY

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

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