Multiple choice questions - Integration

Year: Year 12 · 10

Question 1 $\int x^3 dx =$

- ◯ **A.** $3x^2 + c$
- ◯ **B.** $\frac{x^4}{4} + c$
- ◯ **C.** $x^4 + c$
- ◯ **D.** $\frac{x^3}{3} + c$

Question 2 $\int 5\,dx =$

- ◯ **A.** 5
- ◯ **B.** $5x + c$
- ◯ **C.** $\frac{5x^2}{2} + c$
- ◯ **D.** 0

Question 3 $\int_0^2 x\,dx =$

- ◯ **A.** 1
- ◯ **B.** 2
- ◯ **C.** 4
- ◯ **D.** $\frac{1}{2}$

Question 4 $\int x^{-2} dx =$

- ◯ **A.** $-x^{-1} + c$
- ◯ **B.** $x^{-1} + c$
- ◯ **C.** $-2x^{-3} + c$
- ◯ **D.** $\ln x$

Question 5 The constant of integration is found using

- ◯ **A.** a point on the curve
- ◯ **B.** the second derivative
- ◯ **C.** the limits
- ◯ **D.** the discriminant

Question 6 $\int_a^b f\,dx$ equals

- **A.** $F(a) - F(b)$
- **B.** $F(b) - F(a)$
- **C.** $F(a) + F(b)$
- **D.** $F(b)F(a)$

Question 7 A negative definite integral means the area is

- **A.** negative
- **B.** below the axis and must be made positive
- **C.** zero
- **D.** impossible

Question 8 $\int \sqrt{x}\,dx =$

- **A.** $\frac{2}{3}x^{3/2} + c$
- **B.** $\frac{1}{2}x^{-1/2} + c$
- **C.** $\frac{3}{2}x^{3/2} + c$
- **D.** $x^{1/2} + c$

Question 9 Area between $y = f(x)$ above $y = g(x)$ is

- **A.** $\int (f + g)$
- **B.** $\int (f - g)$
- **C.** $\int fg$
- **D.** $\int f - \int f$

Question 10 $\int_1^3 2\,dx =$

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

Answer grid - Integration

Year: Year 12

Question	Answer	Explanation
1	**B**	Add one, divide.
2	**B**	Integrate a constant.
3	**B**	$[\frac{x^2}{2}]_0^2$.
4	**A**	$\frac{x^{-1}}{-1}$.
5	**A**	Substitute coordinates.
6	**B**	Upper minus lower.
7	**B**	Take the positive value.
8	**A**	$\frac{x^{3/2}}{3/2}$.
9	**B**	Top minus bottom.
10	**B**	$[2x]_1^3 = 6 - 2$.