

1. $\int (3x^2 + 2x + 1) dx =$

- a) $x^3 + x^2 + x + C$
- b) $x^3 + x^2 + x$
- c) $x^3 + 2x^2 + C$
- d) $3x^3 + 2x^2 + x + C$

2. $\int \sin(2x) dx =$

- a) $-\frac{1}{2}\cos(2x) + C$
- b) $-2\cos(2x) + C$
- c) $\frac{1}{2}\cos(2x) + C$
- d) $-\cos(2x) + C$

3. $\int 2^{x^2} x dx =$

- a) $\frac{2^{x^2}}{\ln(2)} + C$
- b) $\frac{1}{2} \frac{2^{x^2}}{\ln(2)} + C$
- c) $\frac{1}{2} \frac{2^{x^2}}{\ln(x)} + C$
- d) $2^{x^2} + C$

4. $\int e^{3x} dx =$

- a) $(1/3)e^{3x} + C$
- b) $3e^{3x} + C$
- c) $e^{3x} + C$
- d) $e^{x^3} + C$

5. $\int (1 / (1 + x^2)) dx =$

- a) $e^x + C$
- b) $\ln|1 + x^2| + C$
- c) $\tan^{-1}(x) + C$
- d) $\cos^{-1}(x) + C$

6. $\int \cos^2(x) \, dx =$

- a) $x/2 + \sin(2x)/4 + C$
- b) $x + \sin(2x) + C$
- c) $\sin(x)\cos(x) + C$
- d) $x/2 - \sin(2x)/2 + C$

7. $\int x e^x \, dx =$

- a) $x e^x - e^x + C$
- b) $e^x + x + C$
- c) $e^x (x + 1) + C$
- d) $e^x (x - 1) + C$

8. $\int_0^1 x^3 \, dx =$

- a) 1
- b) 1/2
- c) 1/3
- d) 1/4

9. $\int \left(\frac{1}{\sqrt{1-x^4}} \right) \, dx =$

- a) $\tan^{-1}(x) + C$
- b) $\cot^{-1}(x) + C$
- c) $\sec^{-1}(x^2) + C$
- d) $\sin^{-1}(x^2) + C$

10. The area between $x = 0$ and $x = \pi$ of $y = \sin(x)$ is:

- a) 0
- b) 1
- c) 2
- d) 3