

Name

Mastering Antiderivatives

Total questions: 15

Worksheet time: 8mins

Instructor name: Dr. Ramanathan Saitechinfo

Class

Date

1. What is the antiderivative of x^2 ?

a) $x^3 + C$

b) $(x^4)/4 + C$

c) $(x^2)/2 + C$

d) $(x^3)/3 + C$

2. Find the antiderivative of $3x^3 - 2x + 1$.

a) $(1/4)x^4 - x^2 + 2x + C$

b) $(3/4)x^4 - x^2 + x + C$

c) $(1/4)x^4 - x + C$

d) $(3/4)x^4 - 2x^2 + 2 + C$

3. Determine the antiderivative of $\sin(x)$.

a) $\tan(x) + C$

b) $-\cos(x) + C$

c) $\cos(x) + C$

d) $-\sin(x) + C$

4. What is the antiderivative of e^x ?

a) $e^{(x+1)} + C$

b) $e^x + C$

c) $e^x - C$

d) $x * e^x$

5. Calculate the antiderivative of $1/x$.

a) $\ln|x| + C$

b) $\ln(x) + C$

c) $x + C$

d) $1/x + C$

6. Find the antiderivative of $\cos(2x)$.

a) $(1/2)\sin(2x) + C$

b) $\sin(2x) + C$

c) $(1/2)\cos(2x) + C$

d) $(1/4)\sin(2x) + C$

7. What is the antiderivative of $5t^4$?

a) $t^5 + C$

b) $t^6 + C$

c) $t^4 + C$

d) $5t^5 + C$

8. Determine the antiderivative of $7 - 4x$.

a) $3x - 2x^2 + C$

b) $-7x + 4x^2 + C$

c) $7x + 2x^2 + C$

d) $7x - 2x^2 + C$

9. What is the antiderivative of $\sec^2(x)$?

a) $\tan(x) + C$

b) $\cos(x) + C$

c) $\sec(x) + C$

d) $\sin(x) + C$

10. Find the antiderivative of $2x * e^{(x^2)}$.

a) $e^{(x^2)} + C$

b) $e^{(2x)} + C$

c) $2x^2 * e^{(x^2)} + C$

d) $x * e^{(x^2)} + C$

11. Calculate the antiderivative of $1/(1+x^2)$.

a) $\sin(x) + C$

b) $x^2/2 + C$

c) $\arctan(x) + C$

d) $\ln(1+x^2) + C$

12. What is the antiderivative of $\ln(x)$?

a) $x^2/2 + C$

b) $x\ln(x) - x + C$

c) $x\ln(x) + x + C$

d) $\ln(x) + C$

13. Determine the antiderivative of $4\sin(x)\cos(x)$.

a) $2\sin^2(x) + C$

b) $-\cos(2x) + C$

c) $\sin(2x) + C$

d) $4\cos^2(x) + C$

14. Find the antiderivative of $(3x^2 + 2x + 1)/(x^3)$.

a) $\ln|x^3| - 2/x + C$

b) $3\ln|x| - 2/x - 1/(2x^2) + C$

c) $3/x^2 + 2/x + 1$

d) $x^3 + 2x + 1$

15. What is the antiderivative of $6x^5 - 3x^2 + 2$?

a) $3x^6 - x^2 + 2x + C$

b) $x^6 + x^3 + 2x + C$

c) $x^6 - x^3 + 2x + C$

d) $2x^6 - 3x + 2 + C$

Answer Keys

1. d) $(x^3)/3 + C$

2. b) $(3/4)x^4 - x^2 + x + C$

3. b) $-\cos(x) + C$

4. b) $e^x + C$

5. a) $\ln|x| + C$

6. a) $(1/2)\sin(2x) + C$

7. a) $t^5 + C$

8. d) $7x - 2x^2 + C$

9. a) $\tan(x) + C$

10. a) $e^{(x^2)} + C$

11. c) $\arctan(x) + C$

12. b) $x\ln(x) - x + C$

13. b) $-\cos(2x) + C$

14. b) $3\ln|x| - 2/x - 1/(2x^2) + C$

15. c) $x^6 - x^3 + 2x + C$

