

SOAL – SOAL LATIHAN INTEGRAL

1. $\int 3x^2 + 2x + 4 \, dx = \dots$

- a. $x^3 + 2x^2 + 4x + C$ d. $x^3 - 2x^2 + 4x + C$
 b. $x^3 + x^2 + 4x + C$ e. $x^3 + x^2 - 4x + C$
 c. $x^3 - x^2 + 4x + C$

2. $\int 10x^{\frac{3}{2}} \, dx = \dots$

- a. $x^{\frac{5}{2}} + C$ d. $2x^{\frac{5}{2}} + C$
 b. $4x^{\frac{5}{2}} + C$ e. $6x^{\frac{5}{2}} + C$
 c. $8x^{\frac{5}{2}} + C$

3. $\int 3 \left(\frac{x^4 - 2x^3 + 1}{x^2} \right) dx = \dots$

- a. $x^3 - x^2 - x^{-1} + C$ d. $x^3 + 3x^2 - 3x^{-1} + C$
 b. $3x^3 - 3x^2 - 3x^{-1} + C$ e. $x^3 - 3x^2 - 3x^{-1} + C$
 c. $3x^3 - x^2 - 3x^{-1} + C$

4. Diketahui $f'(x) = \frac{1}{3}x^2 - 2x + 5$. Jika $f(0) = 5$, maka $f(x) = \dots$

- a. $\frac{1}{9}x^3 - x^2 + 5x + 9$ d. $\frac{1}{9}x^3 - 2x^2 + 5x + 3$
 b. $\frac{2}{3}x^3 - x^2 + 5x + 9$ e. $\frac{1}{9}x^3 - x^2 + 5x + 5$
 c. $\frac{2}{3}x^3 - x^2 + 5x + 5$

5. $\int \sin(u + 1) du = \dots$

- a. $\sin(u + 1) + C$ d. $\cos(u + 1) + C$
 b. $-\sin(u + 1) + C$ e. $-\cos(u + 1) + C$
 c. $\cos\{-(u + 1)\} + C$

6. $\int \cos \frac{1}{2}x \, dx = \dots$

- a. $2 \sin \frac{1}{2}x + C$ d. $\frac{1}{2} \sin \frac{1}{2}x + C$
 b. $2 \cos \frac{1}{2}x + C$ e. $-\frac{1}{2} \sin \frac{1}{2}x + C$
 c. $-2 \sin \frac{1}{2}x + C$

7. $\int_0^2 5x^2 \, dx = \dots$

- a. $\int_0^1 5x^2 \, dx - \int_1^2 5x^2 \, dx$ d. $\int_0^1 5x^2 \, dx + \int_2^1 5x^2 \, dx$
 b. $\int_0^1 5x^2 \, dx + \int_1^2 5x^2 \, dx$ e. $\int_0^1 5x^2 \, dx - \int_2^1 5x^2 \, dx$

$$c. \int_0^1 \frac{5}{2} x^2 dx + \int_1^2 \frac{5}{2} x^2 dx$$

8. Jika $\int f(x).dx = x^2 + C$ dan $\int g(x).dx = -x^2 + C$, maka $\int \{f(x) - g(x)\}dx = \dots$

- a. $2x^2 - C$ d. $4x^2$
 b. $2x^2$ e. $-2x^2 + C$
 c. $4x^2 + C$

9. $\int_0^2 8x^2 - 6x^3 + x^4 dx = \dots$

- a. $2\frac{1}{13}$ d. $3\frac{11}{15}$
 b. $3\frac{1}{15}$ e. $3\frac{13}{15}$
 c. $2\frac{11}{15}$

10. $\int_0^1 2x + 1 dx = \dots$

- a. 1 d. 4
 b. 2 e. 5
 c. 3

11. $\int_0^{\frac{\pi}{2}} \cos x dx = \dots$

- a. 2 d. 1
 b. 0 e. $\frac{1}{2}$
 c. π

12. $\int \sin x \cdot \cos x dx = \dots$

- a. $\sin^2 x + C$ d. $\frac{1}{2} \cos^2 x + C$
 b. $\cos^2 x + C$ e. $\sin 2x + C$
 c. $\frac{1}{2} \sin^2 x + C$

13. $\int \sin^2 x \cdot \cos x dx = \dots$

- a. $\frac{1}{2} \sin^2 x + C$ d. $\frac{1}{2} \cos^2 x + C$
 b. $\frac{1}{3} \sin^3 x + C$ e. $3 \sin^3 x + C$
 c. $\frac{1}{3} \cos^3 x + C$

14. $\int x \cdot \sin(x^2 + 1) dx = \dots$

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

15. $\int 4x^3 (x^4 - 1)^2 dx = \dots$

- a. $\frac{1}{3} (x^4 - 1)^3 + C$ d. $(x^4 - 1) + C$

b. $\frac{2}{3}(x^4 - 1)^3 + C$ e. $(x^4 - 1)^3 + C$

c. $\frac{3}{4}(x^4 - 1)^3 + C$

16. $\int 2x \cdot \cos(x^2 + 1) dx = \dots$

a. $\frac{1}{2} \sin(x^2 + 1) + C$ d. $-\sin(x^2 + 1) + C$

b. $-\frac{1}{2} \sin(x^2 + 1) + C$ e. $2 \sin(x^2 + 1) + C$

c. $\sin(x^2 + 1) + C$

17. $\int 5x \cdot \sin x \cdot dx = \dots$

a. $-5x \cos x + 5 \sin x + C$ d. $5x \cos x - 5 \sin x + C$

b. $5x \cos x + 5 \sin x + C$ e. $x \cos x + 5 \sin x + C$

c. $-5x \cos x - 5 \sin x + C$

18. $\int x \cdot \sin 2x \cdot dx = \dots$

a. $\frac{1}{2}(x \cos 2x + \frac{1}{2} \sin 2x) + C$

b. $-\frac{1}{2}(x \cos 2x - \frac{1}{2} \sin 2x) + C$

c. $-\frac{1}{2}(x \cos 2x + \frac{1}{2} \sin 2x) + C$

d. $2(x \cos 2x + \frac{1}{2} \sin 2x) + C$

e. $-2(x \cos 2x + \frac{1}{2} \sin 2x) + C$

19. $\int x^2 \cdot \sin x \cdot dx = \dots$

a. $x^2 \cos x + 2x \sin x + 2 \cos x + C$

b. $-x^2 \cos x + 2x \sin x + 2 \cos x + C$

c. $x^2 \cos x - 2x \sin x - 2 \cos x + C$

d. $x^2 \cos x + 2x \cos x + 2 \sin x + C$

e. $-x^2 \cos x + 2x \cos x + 2 \sin x + C$

Luas dan Volume

20. Luas daerah yang dibatasi oleh sumbu x dan kurva $y = x^2 - 6x + 5$ adalah....

a. $\frac{30}{3}$

d. $\frac{33}{3}$

b. $\frac{31}{3}$

e. $\frac{34}{3}$

c. $\frac{32}{3}$

21. Luas daerah yang dibatasi oleh kurva $y = x^2$ dan

$y = 2 - x$ adalah ... satuan luas.

a. 4

d. $5 \frac{1}{2}$

b. $4 \frac{1}{2}$

e. $5 \frac{3}{4}$

c. 5

22. Luas daerah yang dibatasi oleh kurva $x = y^2 - 4$, sumbu y, $y = -2$, dan $y = 2$ adalah ... satuan luas.

a. $9 \frac{2}{3}$

d. $11 \frac{1}{3}$

b. $10 \frac{1}{3}$

e. $11 \frac{2}{3}$

c. $10 \frac{2}{3}$

