

Nama = Aisyah Nabila

Kelas = XII-6

Tugas MTK

1. $\int (12x^2 - 4x + 1) dx = \dots$

Jawab

$\Rightarrow \int (12x^2 - 4x + 1)$

$= \frac{12}{3} x^3 - \frac{4}{2} x^2 + x$

$= 4x^3 - 2x^2 + x + C \cdot (D)$

2. hasil dari $\int (3x^2 - 5x + 4) dx = \dots$

Jawab

$\Rightarrow \int (3x^2 - 5x + 4)$

$= \frac{3}{3} x^3 - \frac{5}{2} x^2 + 4x$

$= x^3 - \frac{5}{2} x^2 + 4x + C \cdot (A)$

3. hasil dari $\int (2x-1) (x^2-x+3)^3 dx = \dots$

Jawab

$\Rightarrow \int (2x-1) (x^2-x+3)^3$

$= \frac{2x-1}{2x-1} \cdot \frac{1}{4} (x^2-x+3)^4$

$= \frac{1}{4} (x^2-x+3)^4 + C \cdot (C)$

4. hasil dari $\int x \sqrt{4x+1} dx$ adalah ...

Jawab

x	$(4x+1)^{\frac{1}{2}}$
1	$\frac{1}{6} (4x+1)^{\frac{3}{2}} (+)$
0	$\frac{1}{60} (4x+1)^{\frac{5}{2}} (-)$

$$x \cdot \frac{1}{6} (4x+1)^{\frac{3}{2}} - \frac{1}{60} (4x+1)^{\frac{5}{2}}$$

$$\frac{1}{6} x (4x+1)^{\frac{3}{2}} - \frac{1}{60} (4x+1)^{\frac{5}{2}}$$

$$(4x+1)^{\frac{3}{2}} \left[\frac{1}{6} x - \frac{1}{60} (4x+1) \right]$$

$$(4x+1)^{\frac{5}{2}} \left[\frac{1}{6} x - \frac{4x}{60} - \frac{1}{60} \right]$$

$$(4x+1)^{\frac{3}{2}} \left[\frac{10x}{60} - \frac{4x}{60} - \frac{1}{60} \right]$$

$$(4x+1)^{\frac{3}{2}} \left(\frac{6x}{60} - \frac{1}{60} \right)$$

$$(4x+1)^{\frac{3}{2}} \frac{1}{60} (6x-1)$$

$$\Rightarrow \frac{1}{60} (6x-1) (4x+1)^{\frac{3}{2}}$$

$$\Rightarrow \frac{1}{60} (6x-1) (4x+1)^{\frac{3}{2}} + C + (B)$$

$$5. \int \frac{3(1-x)}{1+\sqrt{x}} dx = \dots$$

Jawab

$$\int \frac{3(1-x)}{1+\sqrt{x}} = \int \frac{3(1-\sqrt{x})(1+\sqrt{x})}{(1+\sqrt{x})}$$

$$= \int 3 - 3\sqrt{x}$$

$$= \int 3 - 3x^{\frac{1}{2}}$$

$$= 3x - \frac{3}{\frac{3}{2}} x^{\frac{3}{2}}$$

$$= 3x - \frac{2}{1} x^{\frac{3}{2}}$$

$$= 3x - 2x^{\frac{3}{2}}$$

$$= 3x - 2x^{\frac{1}{2}} x^{\frac{2}{2}}$$

$$= 3x - 2\sqrt{x} x$$

$$= 3x - 2x\sqrt{x}$$

$$\Rightarrow 3x - 2x\sqrt{x} + C \quad (A).$$