

GUNAWANIRAHMI NIK-84941 ABK-02

MBS

19/11/2021/100

MATH 104

ASSIGNMENT

1 $\int \frac{11-3x}{x^2+2x-3} dx$

Let $x^2+2x-3=0$

$$\int \frac{11-3x}{u} dx$$

$$\int \frac{11-3x}{u} dx = \frac{11x-3x^2}{(x-1)(x+3)} + C$$

$$\int \frac{11-3x}{u} dx = \frac{11x-3x^2}{-4} + C$$

$$\int \frac{11-3x}{u} dx = \frac{3x^2-11x}{4} + C$$

where, $u = x^2+2x-3$

$$\int \frac{11-3x}{x^2+2x-3} dx = \frac{3x^2-11x}{x^2+2x-3} + C$$

$$\int \frac{11-3x}{x^2+2x-3} dx = \frac{x(3x-11)}{(x+3)(x-1)} + C$$

2 $\int \frac{4x-16}{x^2-2x-3} dx$

Let $x^2-2x-3=0$

$$\int \frac{4x-16}{u} dx = \frac{4x^2-16x}{(x-1)(x+3)} + C$$

$$\int \frac{4x-16}{u} dx = \frac{4x^2-16x}{4} + C$$

$$\int \frac{4x+16}{u} dx = \frac{4x^2-16x}{x^2-2x+1} + C$$

$$\int \frac{4x+16}{u} dx = \frac{4x(x-4)}{x(x-2)+1} + C$$

$$\int \frac{4x+16}{u} dx = \frac{4(x-4)}{(x-2)(x+1)} + C$$

$$3) \int \frac{2x^2-9x-35}{(x+1)(x-2)(x+3)} dx$$

$$\text{Let } (x+1)(x-2)(x+3) = u$$

$$\int \frac{2x^2-9x-35}{u} dx = \frac{2x^3-9x^2-35x}{(x-2-1)u} + C$$

$$\int \frac{2x^2-9x-35}{u} dx = \frac{(2x^3-9x^2-35x)u^{-1}}{0} + C$$

$$\int \frac{2x^2-9x-35}{u} dx = \frac{(2x^3-9x^2-35x)}{0} \cdot \frac{1}{(x+1)(x-2)(x+3)}$$

$$\int \frac{2x^2-9x-35}{(x+1)(x-2)(x+3)} dx = \frac{2x^3+9x^2-35x}{0} + C$$

$$\int \frac{2x^2-9x-35}{(x+1)(x-2)(x+3)} dx = \text{undefined} + C$$