

$$2(x-1)^2 - 9(-1) - 35 = A(-1-2)(-1+3)$$

$$2 + 9 - 35 = -6A$$

$$10 - 35 = -6A$$

$$-25 = -6A$$

$$A = \frac{-25}{-6} = \frac{25}{6}$$

$$\text{let } (x-2) = 0 \Rightarrow x = 2$$

$$2(2)^2 - 9(2) - 35 = B(2+1)(2+3)$$

$$8 - 18 - 35 = 15B$$

$$3.) \frac{1}{x^2 + 121} = \int \frac{1}{(x+11)^2}$$

$$= \frac{(x+11)^{-1}}{-1}$$

$$= \frac{-1}{(x+11)} + C$$

Iqbalram Martins Chitauru

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1.) $(11-3x) / (x^2 + 2x - 3)$

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

$$= \frac{11-3x}{(x-1)(x+3)}$$

$$= \frac{A}{(x-1)} + \frac{B}{(x+3)}$$

$$11-3x = A(x+3) + B(x-1)$$

Let $x-1=0 \Rightarrow x=1$

$$11-3(1) = A(1+3) + B(1-1)$$

$$11-3 = 4A$$

$$8 = 4A$$

$$A = 2$$

Let $x+3=0 \Rightarrow x=-3$

$$11-3(-3) = A(-3+3) + B(-3-1)$$

$$11+9 = -4B$$

$$20 = -4B$$

$$B = -5$$

$$\frac{11-3x}{(x-1)(x+3)} = \frac{2}{(x-1)} - \frac{5}{(x+3)} + C$$

$$\int \frac{11-3x}{x^2+2x-3} = \int \frac{2}{(x-1)} - \int \frac{5}{x+3} + C$$

$$2 \log_e(x-1) - 5 \log_e(x+3) = \log \frac{(x-1)^2}{(x+3)^5} + C$$

2. $(2x^2 - 9x - 35) / (x+1)(x-2)(x+3)$

$$\frac{2x^2 - 9x - 35}{(x+1)(x-2)(x+3)} = \frac{A}{(x+1)} + \frac{B}{(x-2)} + \frac{C}{(x+3)}$$

$$2x^2 - 9x - 35 = A(x-2)(x+3) + B(x+1)$$

$$+ C(x+1)(x-2)$$

Let $x+1=0 \Rightarrow x=-1$