Integration by using partial fractions.

$$\int_2^3 \frac{x}{x^2 + 3\cdot x - 4}\,dx = 0.262$$ ==> that we will split the function in fractions before we solve the integral.

if $\frac{x}{x^2 + 3x - 4} = \frac{A\cdot(x+4) + B\cdot(x-1)}{(x+4)\cdot(x-1)\cdot K}$ ==> $A := 1 \quad B := 4 \quad K := 5$ so..

$$\frac{x}{x^2 + 3x - 4} = \frac{1}{K}\cdot\left(\frac{A}{x-1} + \frac{B}{x+4}\right)$$

Test: if x=6 then $\frac{1}{5}\cdot\left(\frac{1}{x-1} + \frac{4}{x+4}\right) = 0.12$ as is $\frac{x}{x^2 + 3\cdot x - 4} = 0.12$ so...

if $f(x) := \frac{1}{x-1}$ then $F(x) := \ln(x-1)$

$$\frac{1}{K}\cdot\int_2^3 \frac{A}{(x-1)} + \frac{B}{(x+4)}\,dx = \frac{1}{K}\cdot(A\cdot\ln(3-1) - A\cdot\ln(2-1) + B\cdot\ln(3+4) - B\cdot\ln(2+4)) = 0.262$$