

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

INT-S1-043

SOSTITUZIONE:

$$\begin{aligned} 5x-4 &= k \\ 5x &= k+4 \\ x &= \frac{1}{5}k + \frac{4}{5} \\ x' &= \frac{dx}{dk} = \frac{1}{5} \\ dx &= \frac{1}{5} dk \end{aligned}$$

$$= \int \frac{2\left(\frac{1}{5}k + \frac{4}{5}\right) + 3}{k} \cdot \frac{1}{5} dk =$$

$$= \int \frac{\frac{2}{5}k + \frac{8}{5} + 3}{5k} dk = \int \frac{\frac{2k+8+15}{5}}{5k} dk = \int \frac{2k+23}{25k} dk =$$

$$= \int \frac{2k}{25k} + \frac{23}{25k} dk = \frac{2}{25} \int dk + \frac{23}{25} \int \frac{1}{k} dk =$$

$$= \frac{2}{25} k + \frac{23}{25} \ln|k| + C_1 =$$

$$= \frac{2}{25} (5x-4) + \frac{23}{25} \ln|5x-4| + C_1 =$$

$$= \frac{2}{5} x - \frac{8}{25} + \frac{23}{25} \ln|5x-4| + C_1 =$$

$$C_1 - \frac{8}{25} = C_2$$

$$= \boxed{\frac{2}{5} x + \frac{23}{25} \ln|5x-4| + C_2}$$

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