

$$\int \frac{ax+b}{cx+d} dx.$$

$$S(ax+b)/(cx+d)dx=$$

$$\begin{aligned} (ax+b)/(cx+d) &= ax/(cx+d) + b/(cx+d) = (a/c) * (xc/(cx+d)) + b/(cx+d) = \\ &= (a/c) * ((xc+d-d)/(cx+d)) + b/(cx+d) = (a/c) * ((xc+d)/(cx+d) - d/(cx+d)) + \\ & b/(cx+d) = (a/c) * (1 - d/(cx+d)) + b/(cx+d) = a/c - da/c(cx+d) + b/(cx+d) = \\ &= 1/(cx+d) * (-da/c + b) + a/c = 1/(cx+d) * ((bc-da)/c) + a/c \end{aligned}$$

$$\text{const1} + \text{const2}/(cx+d)$$

$$\text{const1} = a/c$$

$$\text{const2} = ((bc-da)/c)$$

$$S[\text{const1} + \text{const2}/(cx+d)]dx = x * \text{const1} + \text{const2} * S([1/(cx+d)])dx =$$

$$= x * \text{const1} + (\text{const2}/c) * S([d(cx+d)/(cx+d)]) =$$

$$= x * \text{const1} + (\text{const2}/c) * S([d(t)/(t)]) = x * \text{const1} + (\text{const2}/c) * \ln|t| + C =$$

$$= x * \text{const1} + (\text{const2}/c) * \ln|cx+d| + C = x * a/c + ((bc-da)/c^2) * \ln|cx+d| + C$$

$$cx+d=t$$

$$(c/c) * S([1/(cx+d)])dx = (1/c) * S([1/(cx+d)])d(cx) = (1/c) * S([1/(cx+d)])d(cx+d)$$

$$d(cx+d) = d(cx) + d(d) = c * dx$$