

$$\int \frac{dx}{(x+a)(x+b)}$$

$$S(dx/(x+a)(x+b))$$

$$1/(x+a)(x+b) = A/(x+a) + B/(x+b) = [A(x+b) + B(x+a)]/(x+a)(x+b) = [Ax + Ab + Bx + Ba]/(x+a)(x+b) = [x(A+B) + Ab + Ba]/(x+a)(x+b)$$

$$A+B=0$$

$$Ab + Ba = 1$$

$$S(g-h)dx = S(g)dx - S(h)dx$$

$$A = -B$$

$$-Bb + Ba = 1$$

$$B(a-b) = 1$$

$$B = 1/(a-b)$$

$$A = 1/(b-a)$$

$$1/(x+a)(x+b) = A/(x+a) + B/(x+b) = 1/(b-a)(x+a) + 1/(a-b)(x+b) = 1/(b-a)(1/(x+a) - 1/(x+b))$$

$$S(1/(b-a)(1/(x+a) - 1/(x+b)))dx = 1/(b-a)S(1/(x+a) - 1/(x+b))dx = 1/(b-a)(S(1/(x+a))dx - S(1/(x+b))dx) =$$

$$= 1/(b-a) * \ln|x+a| - 1/(b-a) * \ln|x+b| + C = 1/(b-a) \ln|(x+a)/(x+b)| + C$$