USING PARTIAL FRACTIONS TO FIND INTEGRALS

1 Find: **(a)** $\int \frac{2\,dx}{(x-3)(x-1)}$

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1 Find: **(f)** $\int \frac{(2x-5)dx}{(x-3)(x-2)}$

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1 Find: **(e)** $\int \frac{x}{(x^2+4)(x^2+5)}\,dx$

7 Evaluate: **(a)** $\int_4^5 \frac{x^2-5}{x^2-2x-3}\,dx$

8 Given that $\frac{1}{(x+2)(x+1)^2} = \frac{1}{x+2} - \frac{1}{x+1} + \frac{1}{(x+1)^2}$, evaluate: $\int_0^1 \frac{1}{(x+2)(x+1)^2}\,dx$

21 Using an appropriate substitution of the type $t = \tan x$, find: $\int \frac{dx}{\sin 2x - \cos 2x}$

22 Use the substitution $t = \tan\frac{x}{2}$ to find $\int \frac{dx}{1+3\sin x}$.

23 Use the substitution $t = \tan x$ to find $\int \frac{1+\sin^2 x}{1+\cos^2 x}\,dx$.