

- extend the idea of 'reverse differentiation' to include the integration of e^{ax+b} , $\frac{1}{ax+b}$, $\sin(ax+b)$, $\cos(ax+b)$ and $\sec^2(ax+b)$;
- use trigonometrical relationships (such as double-angle formulae) to facilitate the integration of functions such as $\cos^2 x$;
- integrate rational functions by means of decomposition into partial fractions (restricted to the types of partial fractions specified in paragraph 1 above);
- recognise an integrand of the form $\frac{kf'(x)}{f(x)}$, and integrate, for example, $\frac{x}{x^2+1}$ or $\tan x$;
- recognise when an integrand can usefully be regarded as a product, and use integration by parts to integrate, for example, $x \sin 2x$, $x^2 e^x$ or $\ln x$;
- use a given substitution to simplify and evaluate either a definite or an indefinite integral;
- use the trapezium rule to estimate the value of a definite integral, and use sketch graphs in simple cases to determine whether the trapezium rule gives an over-estimate or an under-estimate.