Partial Fractions	(See Harold's Partial Fractions Cheat Sheet)
Condition	$f(x) = \frac{P(x)}{Q(x)}$ where $P(x)$ and $Q(x)$ are polynomials and degree of $P(x) < Q(x)$ If degree of $P(x) \geq Q(x)$ then do long division first
Example Expansion	$\frac{P(x)}{(ax+b)(cx+d)^2(ex^2+fx+g)}$ $= \frac{A}{(ax+b)} + \frac{B}{(cx+d)} + \frac{C}{(cx+d)^2} + \frac{Dx+E}{(ex^2+fx+g)}$
Typical Solution	$\int \frac{a}{x+b}\, dx = a\ ln\lvert x+b\rvert + C$

Partial Fractions:

Linear factors:
$\frac{P(x)}{(x-r_1)^m} = \frac{A}{(x-r_1)} + \frac{B}{(x-r_1)^2} + \ldots + \frac{Y}{(x-r_1)^{m-1}} + \frac{Z}{(x-r_1)^m}$

Irreducible quadratic factors:
$\frac{P(x)}{(x^2+r_1)^m} = \frac{Ax+B}{(x^2+r_1)} + \frac{Cx+D}{(x^2+r_1)^2} + \ldots + \frac{Wx+X}{(x^2+r_1)^{m-1}} + \frac{Yx+Z}{(x^2+r_1)^m}$

If the fraction has multiple factors in the denominator, we just add the decompositions.