$\int \sin^2 x \cos x \, .dx$	$= \int f'.f^2.dx$ $= \frac{1}{3}\sin^3 x + c$
$\int x^2(x^3 + 1)^4 \, .dx$	$= \int f'.f^4.dx$ $= \frac{1}{3 \times 5}(x^3 + 1)^5 + c$
$\int \frac{1}{(x+1)^3}.dx$	$= \int f'.f^{-3}.dx$ $= \frac{-1}{2}(x+1)^{-2} + c$
$\int \frac{1}{x+1}.dx$	$= ln(x+1) + c$
$\int \frac{x+1}{x}.dx$	$= \int 1 + \frac{1}{x} \, .dx$ $= x + ln(x) + c$
$\int x^5 (x+1).dx$	$= \int x^6 + x^5 \, .dx$ $= \frac{1}{7}x^7 + \frac{1}{6}x^6 + c$
$\int \sqrt{x+1} + e^{x+1} \, .dx$	$= \int (x+1)^{0.5}.dx + \int e^{x+1}.dx$ $= \frac{2}{3}(x+1)^{1.5} + e^{x+1} + c$

$\int \frac{4x+5}{2x+4}.dx$	Merit $= \int \frac{2(x+4)}{2x+4} + \frac{-3}{2x+4}.dx$ $= 2x + \frac{-3}{2} ln(2x+4) + c$
$\int \tan(2x+4).dx$	Merit $= \int \frac{\sin(2x+4)}{\cos(2x+4)}.dx$ $= \frac{-1}{2} ln(\cos(2x+4)) + c$
$\int \frac{5}{(2x+4)^4}.dx$	$= \int 5\,(x+4)^{-4}.dx$ $= \frac{-5}{2 \times 3} (2x+4)^{-3} + c$
$\int \frac{1}{2x+4}.dx$	$= \frac{1}{2} ln(2x+4) + c$
$\int \frac{2x+4}{x^2}.dx$	$= \int \frac{2}{x} + \frac{4}{x^2}.dx$ $= 2\,ln(x) - 4\,x^{-1} + c$
$\int \sqrt{x}\,(2x+4).dx$	$= \int 2x^{1.5} + 4x^{0.5}.dx$ $= \frac{4}{5} x^{2.5} + \frac{8}{3} x^{1.5} + c$
$\int \sqrt{x+1}\,(2x+4).dx$	Excellence $u = x + 1 \qquad dx = 1.du$ $= \int \sqrt{u}\,(2u+2).1.du$ $= \frac{4}{5} x^{2.5} + \frac{4}{3} x^{1.5} + c$

$\int \sin^2 x \, . dx$	$= \int \frac{1}{2} - \frac{1}{2}\cos 2x \, . dx \quad$ as $\cos 2x = 1 - 2\sin^2 x$ $= \frac{1}{2}x - \frac{1}{4}\sin 2x + c$
$\int e^{2x}(e^x + \pi) \, . dx$	$\int e^{3x} + \pi e^{2x} \, . dx$ $= \frac{1}{3} e^{3x} + \frac{\pi}{2} e^{2x} + c$
$\int \frac{8x}{(x^2+1)^4} . dx$	$= \int f' . f^{-4} . dx$ $= \frac{-8}{2 \times 3} (x^2 + 1)^{-3} + c$
$\int \frac{e^{2x}}{e^{2x}+1} . dx$	$= \frac{1}{2} ln(e^{2x} + 1) + c$
$\int \frac{4x+5}{\sqrt{x}} . dx$	$= \int 4x^{0.5} . dx + \int 5e^{-0.5} . dx$ $= \frac{8}{3} x^{1.5} + 10 x^{0.5} + c$
$\int \frac{10}{\sin^2 5x} . dx$	$= \int 10 \operatorname{cosec}^2 5x \, . dx$ $= -2 \cot 5x + c$
$\int \frac{\tan 2x}{\cos 2x} . dx$	$= \int \sec 2x \tan 2x \, . dx$ $= \frac{1}{2} \sec 2x + c$