Choose Your Method – Integrate These

$\int_a^{2a} \frac{x^2+1}{x}\,dx$	$\int_0^1 \frac{1}{1+x}\,dx$	$\int_0^1 \frac{x}{x+1}\,dx$	$\int_{-\frac{\pi}{6}}^{\frac{\pi}{3}} xcos3x\,dx$	$\int_a^{2a} \frac{3x^2+1}{x^3+x}\,dx$	$\int_2^3 \frac{x}{(1-x)^2}\,dx$
$\int_0^{2\pi} cos^2x\,dx$	$\int_{-\frac{5}{2}}^{-2} (2x+5)^{10}\,dx$	$\int_0^1 \frac{x^7}{(x^4+2)^2}\,dx$	$\int_0^{\frac{\pi}{2}} x^2 sin4x\,dx$	$\int_4^6 \frac{x-2}{2x^2-8x+3}\,dx$	$\int_0^{0.5} \frac{1}{1-x^2}\,dx$
$\int_0^{\frac{\pi}{4}} cos^3 2x\,dx$	$\int_{-\frac{4}{9}}^{-\frac{1}{3}} \sqrt{9x+4}\,dx$	$\int_{\frac{\pi}{6}}^{\frac{\pi}{3}} 1+tan^2x\,dx$	$\int_0^{\frac{1}{3}} xe^{-3x}\,dx$	$\int_1^e \frac{x+x^{-1}}{x^2+2lnx}\,dx$	$\int_6^7 \frac{x-9}{(x-3)(x-5)}\,dx$
$\int_0^{\frac{1}{2}} \left(\frac{e^x+e^{-x}}{2}\right)^2 dx$	$\int_0^{2\sqrt{2}} x^{\frac{1}{3}}\left(x^{\frac{4}{3}}-2\right)^2 dx$	$\int_0^{\frac{\pi}{3}} \frac{1}{(1+2tanx)^2 cos^2x}\,dx$	$\int_{\frac{1}{3}}^1 ln3x\,dx$	$\int_{ln2}^1 \frac{2e^x}{e^x+3}\,dx$	$\int_2^6 \frac{1}{x(k-x)}\,dx$
	$\int_{\sqrt{2}}^2 \frac{25x^4}{(3-x^5)^2}\,dx$	$\int_{\pi}^{2\pi} sinxcosx\,dx$	$\int_{ln2}^{ln3} e^{4x}(2x+1)\,dx$		$\int_0^2 \frac{28+4x^2}{(3x+1)(5-x)^2}\,dx$
	$\int_{\sqrt{2}}^{\sqrt{3}} 2x(4-3x^2)^5\,dx$	$\int_0^{\frac{\pi}{2}} cosxe^{sinx}\,dx$	$\int_a^{2a} x^3 lnx\,dx$		$\int_4^5 \frac{3x-5}{x-k}\,dx$
		$\int_0^{\frac{1}{2}} 4xln(2x+1)\,dx$			
		$\int_0^1 xe^{x^2}\,dx$			

Choose Your Method – Answers without Limits

$\frac{x^2}{2}+lnx$	$\ln(x+1)$	$x-\ln(x+1)$	$\frac{3xsin3x+cos3x}{9}$	$\ln(x^3+x)$	$\frac{1}{1-x}+\ln(x-1)$
$\frac{x}{2}+\frac{sin2x}{4}$	$\frac{(2x+5)^{11}}{22}$	$\frac{1}{2x^4+4}+\frac{\ln(x^4+2)}{4}$	$\frac{(1-8x^2)cos4x+4xsin4x}{32}$	$\frac{ln(2x^2-8x+3)}{4}$	$\frac{\ln(x+1)-\ln(1-x)}{2}$
$\frac{9sin2x+sin6x}{24}$	$\frac{2(9x+4)^{\frac{3}{2}}}{27}$	$tanx$	$\frac{-3x-1}{9e^{3x}}$	$\frac{ln(x^2+2lnx)}{2}$	$3\ln(x-3)-2\ln(x-5)$
$\frac{4x-e^{-2x}+e^{2x}}{8}$	$\frac{\left(x^{\frac{4}{3}}-2\right)^3}{4}$	$\frac{\frac{-1}{2(1+2tanx)}}{=\frac{cosx}{2(cosx+2sinx)}}$	$x(ln3x-1)$	$2\ln(e^x+3)$	$\frac{lnx-\ln(x-k)}{k}$
	$\frac{5}{3-x^5}$	$\frac{1-2\cos^2 x}{4}$	$\frac{e^{4x}}{8}(4x+1)$		$\frac{8}{5-x}+\ln(x-5)+\frac{\ln(3x+1)}{3}$
	$-\frac{(4-3x^2)^6}{18}$	e^{sinx}	$\frac{x^4(4lnx-1)}{16}$		$3(x-k)+4\ln(x-k)$
		$\frac{(2x+1)}{4}(-2x$ $+(4x-2)\ln(2x+1)+3$			
		$\frac{e^{x^2}}{2}$			

Choose Your Method – Answers as Definite Integrals

$\frac{3a^2}{2} + ln2$	$\ln 2$	$1 - \ln 2$	$\frac{-2-\pi}{18}$	$\ln\left(\frac{8a^2+2}{a^2+1}\right)$	$\frac{1}{2} + \ln 2$
π	$\frac{1}{22}$	$\frac{1}{12}\left(\ln\left(\frac{27}{8}\right) - 1\right)$	$-\pi^2$	$\frac{ln3}{2}$	$\frac{\ln 3}{2}$
$\frac{1}{3}$	$\frac{2}{27}$	$\frac{6-\sqrt{3}}{11}$	$\frac{e-2}{9e}$	$\frac{ln(e^2+2)}{2}$	$-\ln\left(\frac{27}{16}\right)$
0.5438	4	-0.5	$ln3 - \frac{2}{3}$	$2\ln\left(\frac{e+3}{5}\right)$	$\frac{2\ln 6}{7}$
	$\frac{20(16+29\sqrt{2})}{667}$	0	$\frac{65-64ln2+324ln3}{8}$		$\frac{16 - 15\ln\left(\frac{5}{3}\right) + 5ln7}{15}$
	$-\frac{1729}{2}$	$e - 1$	$\frac{a^4(60lna - 15 + 16ln16)}{16}$		$(5-3k)\ln\left(\frac{4-k}{5-k}\right) + 3$
		0.25			
		$\frac{e-1}{2}$			

How about these?

In each case, decide whether you need substitution, by parts, or neither (what instead? or a combo?!)

$\int xe^{-x}\,dx$	$\int x\sqrt{x+1}\,dx$	$\int sinx\,cos^3x\,dx$	$\int \frac{1}{1+\sqrt{x}}\,dx$
$\int \cos^2 x + 1\,dx$	$\int \frac{2}{x^2+4x+3}\,dx$	$\int x^4 lnx\,dx$	$\int \sqrt{1-x^2}\,dx$

What about this…?

$$\int_1^2 \frac{3-2x}{x(3-x)}\,dx$$