Get Smart!
Addition Trick with Integrals

Pick four integrals from the sixteen definite integrals below so that no two integrals are in the same row or column.

Then evaluate the integrals, find the sum, and you will learn the name of Maxwell Smart's partner.

$\displaystyle\int_{0}^{4}\left(2x^{2}+x-\frac{5}{2}\right)dx$	$\displaystyle\int_{-1}^{1}x^{2}\,dx$	$\displaystyle\int_{1}^{4}\sqrt{x}\,dx$	$\displaystyle\int_{\frac{-\pi}{4}}^{\frac{\pi}{4}}\cos 2x\,dx$
$\displaystyle\int_{-11}^{27}dw$	$\displaystyle\int_{5}^{0}\frac{dw}{\sqrt{9-w}}$	$\displaystyle\int_{0}^{3}\frac{dt}{\sqrt{4-t}}$	$\displaystyle\int_{0}^{1}\left(x^{2}-2\right)dx$
$\displaystyle\int_{1}^{8}2\sqrt{1+3x}\,dx$	$\displaystyle\int_{0}^{2}\left((2x-1)^{3}+1\right)dx$	$\displaystyle\int_{0}^{4}\frac{5x\sqrt{x}\,dx}{4}$	$\displaystyle\int_{4}^{9}\left(\sqrt{r}-\frac{1}{15}\right)dr$
$\displaystyle\int_{-3}^{1}\left(6x^{2}-5x+2\right)dx$	$\displaystyle\int_{0}^{121}\frac{2\,dx}{\sqrt{x}}$	$\displaystyle\int_{-7}^{5}(3-y)\,dy$	$\displaystyle\int_{0}^{4}\frac{\left(4x^{2}+12x-1\right)dx}{4}$

Now, go back and evaluate the other twelve definite integrals. Can you explain why this "trick" always works, no matter which four integrals you choose?

Click here for the answer