تذكير :

الدالة $x \to \frac{1}{n+1} x^{n+1}$ هي الدالة الأصلية للدالة $x \to x^n$

على IR.

* $I_1 = \int_1^2 3\,dx = [3x]_0^2 = 6$

* $I_2 = \int_1^2 (2x - 1)\,dx = [x^2 - x]_1^2 = 2$

* $I_3 = \int_{-1}^1 (x^2 + x + 1)\,dx = \left[\frac{x^3}{3} + \frac{x^2}{2} + x\right]_{-1}^1 = \frac{8}{3}$

* $I_4 = \int_0^1 (x - 2)(x + 1)\,dx$

$= \int_0^1 (x^2 - x - 2)\,dx$

$= \left[\frac{x^3}{3} - \frac{x^2}{2} - 2x\right]_0^1$

$= -\frac{7}{6}$

* $I_5 = \int_0^1 \left(\frac{3}{2}x^3 - \frac{\sqrt{2}}{2}x\right)dx$

$= \left[\frac{3}{8}x^4 - \frac{\sqrt{2}}{4}x^2\right]_0^1$

$= \frac{3 - 2\sqrt{2}}{8}$

$I_6 = \int_{-1}^2 \left(x - \frac{1}{2}\right)^2 dx$

$= \int_{-1}^2 \left(x^2 - x + \frac{1}{4}\right) dx$

$= \left[\frac{x^3}{3} - \frac{x^2}{2} + \frac{1}{4}x\right]_{-1}^2$

$= \frac{9}{4}$

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