27) $\int (2x^3 - 6x^2 + 5x)\,dx$

$\int 2x^3\,dx - \int 6x^2\,dx + \int 5x\,dx$

$2\int x^3\,dx - 6\int x^2\,dx + 5\int x\,dx$

$\frac{2x^4}{4} - \frac{6x^3}{3} + \frac{5x^2}{2} + C$

$\frac{x^4}{2} - 2x^3 + \frac{5x^2}{2} + C$ //

- $f(x) = \frac{x^4}{2} - 2x^3 + \frac{5x^2}{2} + C$

$= \frac{d}{dx}\frac{4x^3}{2} - 6x^2 + \frac{10x}{2} + 0$

$= 2x^3 - 6x^2 + 5x + 0.$

$= 2x^3 - 6x^2 + 5x$ //

28) $\int (2x^4 + 3x^3 - 2x^2)\,dx$

$\int 2x^4\,dx + \int 3x^3\,dx - \int 2x^2\,dx$

$2\int x^4\,dx + 3\int x^3\,dx - 2\int x^2\,dx$

$\frac{2x^5}{5} + \frac{3x^4}{4} - \frac{2x^3}{3} + C$ //

- $f(x) = \frac{2x^5}{5} + \frac{3x^4}{4} - \frac{2x^3}{3} + C$

$= \frac{d}{dx}\frac{2x^5}{5} + \frac{d}{dx}\frac{3x^4}{4} - \frac{d}{dx}\frac{2x^3}{3}$

$= \frac{10x^4}{5} + \frac{12x^3}{4} - \frac{6x^2}{3} + 0$

$= 2x^4 + 3x^2 - 2x^2$ //

29) $\int (4x^3 + 6x^2 - 5x + 10)\,dx$

$\int 4x^3\,dx + \int 6x^2\,dx - \int 5x\,dx - \int 10\,dx$

$4\int x^3\,dx + 6\int x^2\,dx - 5\int x\,dx - 10\int dx$

$4\frac{x^4}{4} + 6\frac{x^3}{3} - \frac{5x^2}{2} - 10x + C$

$x^4 + 2x^3 - \frac{5x^2}{2} - 10x + C$ //

- $f(x) = x^4 + 2x^3 - \frac{5x^2}{2} + 10x + C$

$= 4x^3 + 6x^2 - \frac{10x}{2} + 10 + 0$

$= 4x^3 + 6x^2 - 5x + 10$ //

30) $\int (3x^2 + 2x + 1)\,dx$

$\int 3x^2\,dx + \int 2x\,dx + \int 1\,dx$

$3\int x^2\,dx + 2\int x\,dx + 1\int dx$

$3\cdot\frac{x^3}{3} + \frac{2x^2}{2} + x + C$

$x^3 + x^2 + x + C$ //

- $f(x) = x^3 + x^2 + x + C$

$= \frac{d}{dx}x^3 + \frac{d}{dx}x^2 + \frac{d}{dx}x + C$

$= 3x^2 + 2x + 1 + 0$

$= 3x^2 + 2x + 1$ //