Samples **Integrals SOLUTIONS**

1.

$$\begin{aligned}\int_{-1}^{1}\left(-6x^2+6x-4\right)dx &= \Big[-2x^3+3x^2-4x\Big]_{-1}^{1}\\ &= \left(-2\times 1^3+3\times 1^2-4\times 1\right)-\left(-2\times(-1)^3+3\times(-1)^2-4\times(-1)\right)\\ &= -2+3-4-(2+3+4)\\ &= -3-9\\ &= -12\end{aligned}$$

2.

$$\begin{aligned}\int_{0}^{3}\left(3x^2+8\right)dx &= \Big[x^3+8x\Big]_{0}^{3}\\ &= \left(3^3+8\times 3\right)-\left(0^3+8\times 0\right)\\ &= 27+24-0\\ &= 51-0\\ &= 51\end{aligned}$$

3.

$$\begin{aligned}\int_{-3}^{0}\left(-15x^2+8x+10\right)dx &= \Big[-5x^3+4x^2+10x\Big]_{-3}^{0}\\ &= \left(-5\times 0^3+4\times 0^2+10\times 0\right)-\left(-5\times(-3)^3+4\times(-3)^2+10\times(-3)\right)\\ &= 0-(135+36-30)\\ &= 0-141\\ &= -141\end{aligned}$$