

Solutions

$$\begin{aligned} \underline{1} \quad & \int (5x^3 + 8x^2 - 4x + 7) dx \\ &= \int 5x^3 dx + \int 8x^2 dx - \int 4x dx + \int 7 dx \\ &= \frac{5x^4}{4} + \frac{8x^3}{3} - \frac{4x^2}{2} + 7x + C \\ &= \boxed{\frac{5x^4}{4} + \frac{8x^3}{3} - 2x^2 + 7x + C} \end{aligned}$$

$$\begin{aligned} \underline{2} \quad & \int 6x^2(x^3 - 5) dx \\ &= \int (6x^5 - 30x^2) dx \\ &= \int 6x^5 dx - \int 30x^2 dx \\ &= \frac{6x^6}{6} - \frac{30x^3}{3} + C \\ &= \boxed{x^6 - 10x^3 + C} \end{aligned}$$

$$\begin{aligned} \underline{3} \quad & \int \frac{1 + 2x^7}{11x} dx \\ &= \int \frac{1}{11x} dx + \int \frac{2x^7}{11x} dx \\ &= \frac{1}{11} \int \frac{1}{x} dx + \frac{2}{11} \int x^6 dx \\ &= \frac{1}{11} \ln|x| + \frac{2}{11} \frac{x^7}{7} + C \\ &= \boxed{\frac{1}{11} \ln|x| + \frac{2x^7}{77} + C} \end{aligned}$$