

$$\int \frac{2x^3 + 3x^2 - 5x + 7}{6x^2} dx =$$

INT-S1-012

$$= \int \frac{2x^3}{6x^2} + \frac{3x^2}{6x^2} - \frac{5x}{6x^2} + \frac{7}{6x^2} dx =$$

$$= \frac{2}{6} \int x dx + \frac{3}{6} \int 1 dx - \frac{5}{6} \int \frac{1}{x} dx + \frac{7}{6} \int \frac{1}{x^2} dx =$$

$$= \frac{1}{3} \int x dx + \frac{1}{2} \int 1 dx - \frac{5}{6} \int \frac{1}{x} dx + \frac{7}{6} \int x^{-2} dx =$$

$$= \frac{1}{3} \frac{1}{2} x^2 + \frac{1}{2} x - \frac{5}{6} \ln|x| + \frac{7}{6} \frac{1}{-2+1} x^{-2+1} + k =$$

$$= \boxed{\frac{1}{6} x^2 + \frac{1}{2} x - \frac{5}{6} \ln|x| - \frac{7}{6} \frac{1}{x} + k}$$