

$$\begin{aligned} \textcircled{1} \quad a) \quad & \int (3x^3 - 6x + 7) dx \\ &= \frac{3x^4}{4} - \frac{6x^2}{2} + 7x + C \\ &\text{or } \frac{3x^4}{4} - 3x^2 + 7x + C \end{aligned}$$

$$\begin{aligned} b) \quad & \int 9x^{3/2} dx \\ &= 9 \left( \frac{2}{5} x^{5/2} \right) + C \\ &= \frac{18}{5} x^{5/2} + C \end{aligned}$$

$$\begin{aligned} c) \quad & \int \frac{8}{x^2} dx \\ &= \int 8x^{-2} dx \\ &= 8(-x^{-1}) + C \\ &= -8x^{-1} + C \end{aligned}$$

$$\begin{aligned} d) \quad & \int \frac{4}{\sqrt{x}} dx \\ &= \int 4x^{-1/2} dx \\ &= 4(2x^{1/2}) + C \\ &= 8x^{1/2} + C \end{aligned}$$

②

$$\begin{aligned} \text{Let } u &= x^2 - 2x \\ du &= (2x - 2) dx \\ 4 du &= (8x - 8) dx \end{aligned}$$

$$\begin{aligned} \int \frac{8x - 8}{(x^2 - 2x)^3} dx &= \int \frac{4 du}{u^3} \\ &= \int 4u^{-3} du \\ &= 4\left(-\frac{1}{2} u^{-2}\right) + C \\ &= -2(x^2 - 2x)^{-2} + C \end{aligned}$$