

$$6) \int -\frac{9}{4} dx = -\frac{9}{4} \int dx$$

$$= -\frac{9}{4} x + C //$$

$$\bullet f(x) = -\frac{9}{4} x + C$$

$$= \frac{d}{dx} \cdot \frac{9}{4} x + \frac{d}{dx} C$$

$$= -\frac{9}{4} + 0$$

$$= -\frac{9}{4} //$$

$$7) \int 3x^4 dx = 3 \int x^4 dx$$

$$= 3 \left( \frac{x^{4+1}}{4+1} \right) + C$$

$$= 3 \left( \frac{x^5}{5} \right) + C$$

$$= \frac{3x^5}{5} + C //$$

$$\bullet f(x) = \frac{3x^5}{5} + C$$

$$= \frac{d}{dx} \frac{3x^5}{5} + \frac{d}{dx} C$$

$$= \frac{15x^4}{8} + 0$$

$$= 3x^4 //$$

$$8) \int 2x^7 dx = 2 \int x^7 dx$$

$$= 2 \left( \frac{x^{7+1}}{7+1} \right) + C$$

$$= 2 \left( \frac{x^8}{8} \right) + C$$

$$= \frac{2x^8}{8} + C$$

$$= \frac{x^8}{4} + C //$$

$$\bullet f(x) = \frac{x^8}{4} + C$$

$$= \frac{d}{dx} \frac{x^8}{4} + \frac{d}{dx} C$$

$$= \frac{8x^7}{4} + 0$$

$$= 2x^7 //$$

$$9) \int \frac{1}{x^3} dx = \int x^{-3} dx$$

$$= \left( \frac{x^{-3+1}}{-3+1} \right) + C$$

$$= \frac{x^{-2}}{-2} + C$$

$$= -\frac{1}{2x^2} + C$$

$$\bullet f(x) = -\frac{1}{2x^2} + C$$

$$= -\frac{x^{-2}}{2} + C$$

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

$$= \frac{1}{2} x^{-3} + 0$$

$$= x^{-3} = \frac{1}{x^3} //$$