

①.

$$\int_{-2}^1 (8x^3 - 6x) dx = \left[\frac{8x^4}{4} - \frac{6x^2}{2} \right]_{-2}^1$$

$$= [2x^4 - 3x^2]_{-2}^1$$

$$= (2(1)^4 - 3(1)^2) - (2(-2)^4 - 3(-2)^2)$$

$$= (2 - 3) - (2(16) - 3(4))$$

$$= (-1) - (32 - 12)$$

$$= -1 - 20$$

$$= \boxed{-21}$$

CORRECTION SECTION II

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#2nd

II
#2

$$\int_1^3 8x \sqrt[3]{x^2-1} dx = \int_1^3 8x(x^2-1)^{1/3} dx$$

$$\text{Let } u = x^2 - 1$$

$$\rightarrow du = 2x dx$$

$$\rightarrow 4du = 8x dx$$

Limits

$$\text{upper: } u = 3^2 - 1$$

$$= 8$$

$$\text{lower: } u = 1^2 - 1$$

$$= 0$$

$$= 4 \int_0^8 u^{1/3} du$$

$$= \left[4 u^{4/3} \right]_0^8$$

$$= (4(8)^{4/3}) - (4(0)^{4/3})$$

$$= (4(2^4)) - 0$$

$$= 4(16)$$

$$= \boxed{64}$$