

④

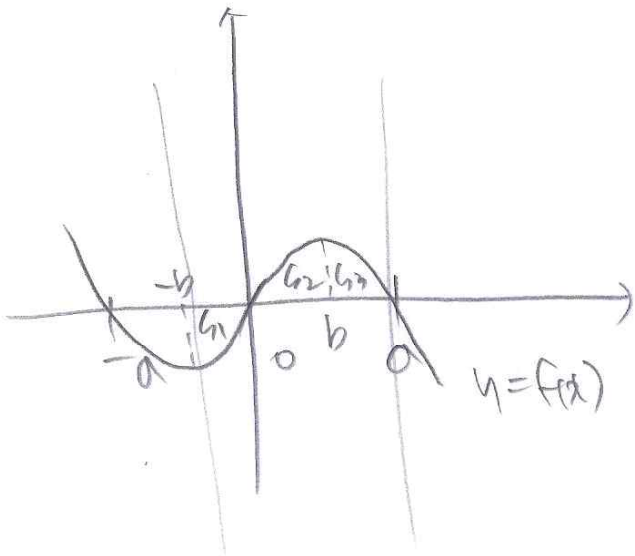
$$f(x) = -x(x+a)(x-a) = -x(x^2 - a^2) = \underline{-x^3 + a^2x}$$

즉대 x 가 $\pm b$.

가운데 (영역) (영역)

$$\int_{-b}^a f(x) dx = A, \quad \int_b^{a+b} f(x-b) dx = B$$

$$\int_{-b}^a |f(x)| dx$$



$$\textcircled{1} \int_{-b}^a f(x) dx = A$$

$$= -L_1 + L_2 + L_3 = A.$$

$$L_3 = A.$$

($L_1 = L_2$). \therefore 영역 대칭.

$$\textcircled{2} \int_b^{a+b} f(x-b) dx = B$$

$x-b = t$ 로 치환

$$= \int_0^a f(t) dt = L_2 + L_3 = B.$$

$$= L_2 + A = B$$

$$L_2 = B - A$$

정답 ①

$$\textcircled{3} \int_{-b}^a |f(x)| dx$$

$$= L_1 + L_2 + L_3 = 2(B-A) + A = 2B - 2A + A = 2B - A$$