

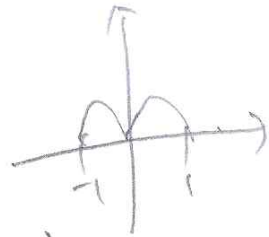
2. (가) $-1 \leq x < 1$ $f(x) = \frac{(x^2-1)^2}{x^4+1} \rightarrow$ 우함수.

(나) $f(x+2) = f(x) \rightarrow$ 주기 2인 함수.

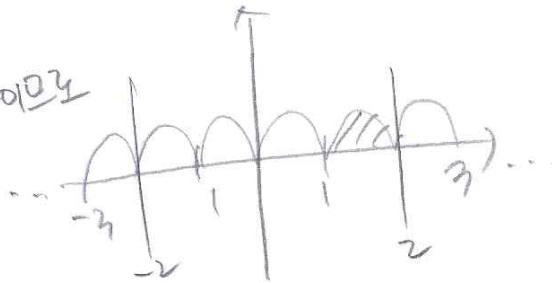
(b)

7. $\int_{-2}^2 f(x) dx = 4 \int_0^1 f(x) dx$

우함수인 만큼 대칭



주기 2이므로



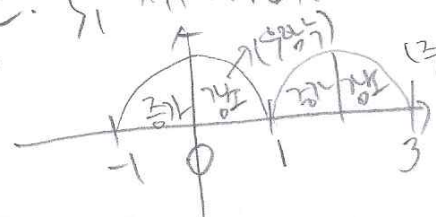
$\int_{-2}^2 f(x) dx = 4 \int_0^1 f(x) dx$ (o)

6. $k < 2$ $f(x) > 0$ $\int_{-1}^1 f(x) dx > 0$ \rightarrow 주기 2이므로 $|k| < 2$ 구간은 $-k < x < 0$ 의 구간에서 양의 값을 갖는다.

$$f'(x) = \frac{2(x^2-1)2x(x^4+1) - (x^2-1)^2 \cdot 4x^3}{(x^4+1)^2} = \frac{(x^2-1)4x(x^4+1 - (x^2-1)x^2)}{(x^4+1)^2} = \frac{(x^2-1)4x(x^4+1 - x^4 + x^2)}{(x^4+1)^2} = \frac{(x^2-1)4x(x^2+1)}{(x^4+1)^2} = \frac{4x(x^2-1)(x^2+1)}{(x^4+1)^2} = \frac{4x(x^2-1)}{(x^4+1)^2} = \frac{4x(x-1)(x+1)}{(x^4+1)^2}$$

± $\int_1^3 x|f(x)| dx = \int_1^2 x f(x) dx + \int_2^3 -x f(x) dx$

$-k < 0$ 이니 $f(x) > 0$



$$= [x f(x)]_1^2 - \int_1^2 f(x) dx - [x f(x)]_2^3 + \int_2^3 f(x) dx$$

$$= 2f(2) - f(1) - 3f(3) + 2f(2) = 2f(2) - f(1) - 3f(-1) + 2f(0) = 4(f(0) - f(-1)) = 4(1) = 4$$

± 값