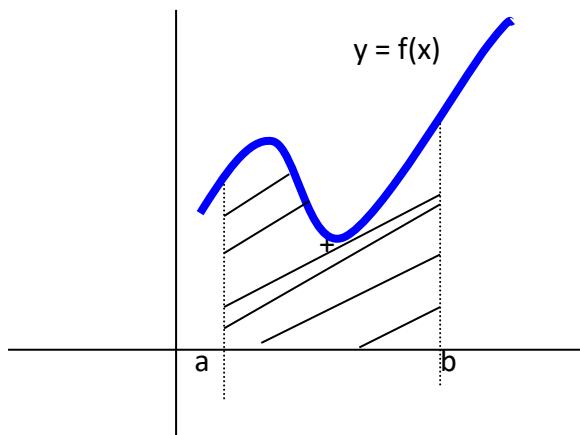


# AZALERA INTEGRALEN BIDEZ

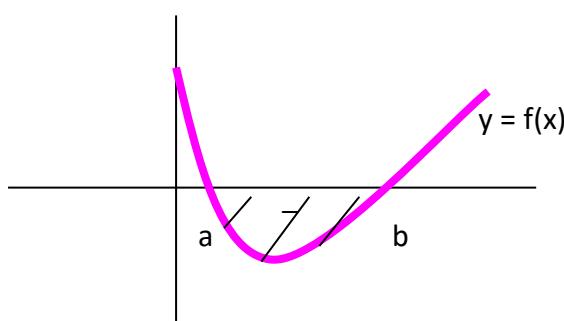
## A) Kurba bat eta OX ardatzaren artean mugaturiko azalera



$f(x) > 0$  bada

KURBA GAINETIK

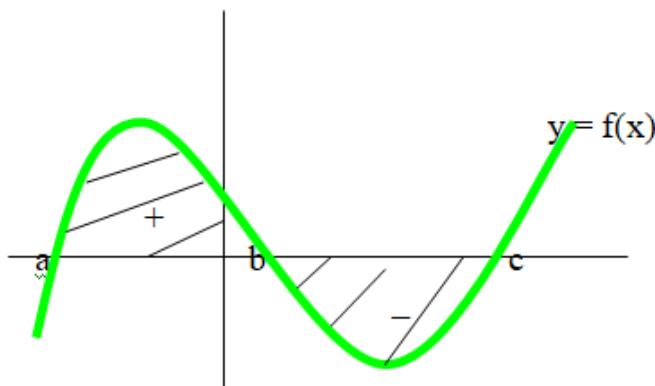
$$\text{Azalera} = \int_a^b f(x) dx$$



$f(x) < 0$  bada

KURBA AZPITIK

$$\text{Azalera} = \left| \int_a^b f(x) dx \right| = \int_b^a f(x) dx$$



$f(x) < 0$  eta  $f(x) > 0$  bada

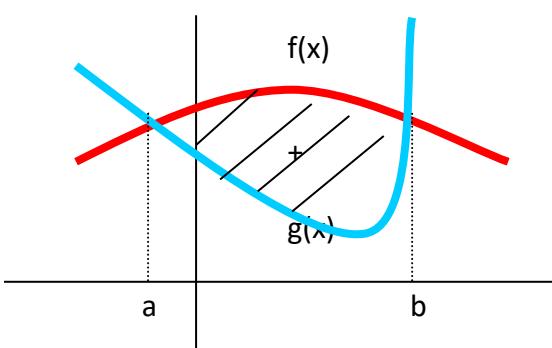
$$\text{Azalera} = \left| \int_a^b f(x) dx \right| + \left| \int_b^c f(x) dx \right| \text{ edo orokorrean}$$

$$\text{Azalera} = \left| \int_a^b f(x) dx \right| + \left| \int_b^c f(x) dx \right|$$

## B) Bi kurbaren artean mugatutako azalera

### B1) Azalera funtzioen ebaketa puntuoen artean

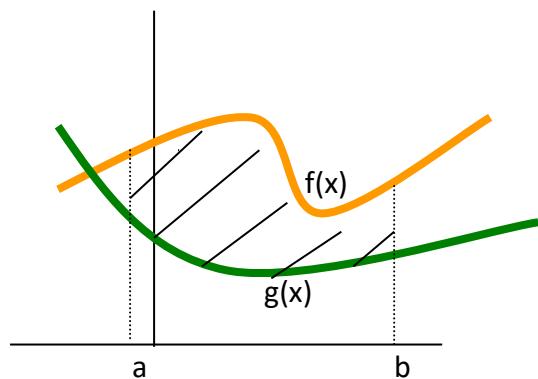
$f(x) > g(x)$  bada → **Azalera = Goiko funtzioa – Beheko funtzioa**



$$\text{Azalera} = \int_a^b (f(x) - g(x)) dx$$

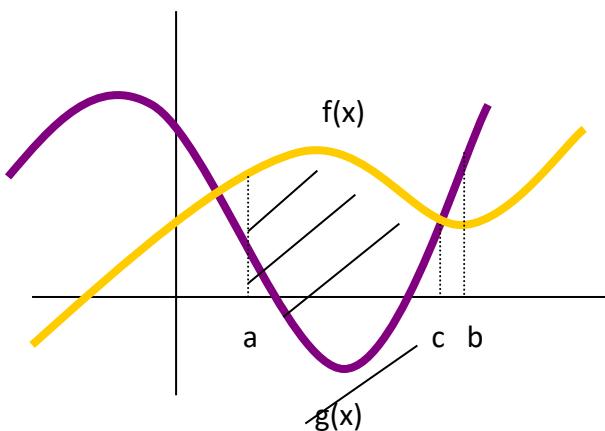
$$\text{Azalera} = \left| \int_a^b (f(x) - g(x)) dx \right|$$

### B2) Azalera $[a,b]$ tartean bada, $f(x)$ eta $g(x)$ funtzioen ebaketa puntuak aztertu.



**Tartean ez badago ebaketarik**

$$\text{Azalera} = \left| \int_a^b (f(x) - g(x)) dx \right| = \int_a^b (f(x) - g(x)) dx$$



**Tartean ebaketa puntuak badaude**

$$\text{Azalera} = \left| \int_a^c (f(x) - g(x)) dx \right| + \left| \int_c^b (f(x) - g(x)) dx \right|$$