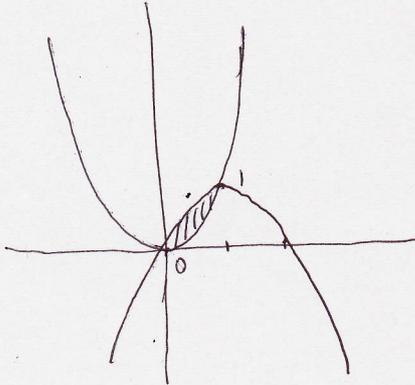


2 曲線 $y = x^2$ と $y = -x^2 + 2x$ で囲まれる部分の面積を求めよ。

[日本大]

$$y = -x^2 + 2x$$

$$= -(x-1)^2 + 1$$



$$x^2 = -x^2 + 2x$$

$$2x^2 - 2x = 0$$

$$2x(x-1) = 0 \quad x=0, 1 \text{ で交わる.}$$

$$\int_0^1 (-x^2 + 2x - x^2) dx$$

$$= \int_0^1 (-2x^2 + 2x) dx$$

$$= \left[-\frac{2}{3}x^3 + x^2 \right]_0^1$$

$$= -\frac{2}{3} + 1$$

$$= \frac{1}{3}$$