

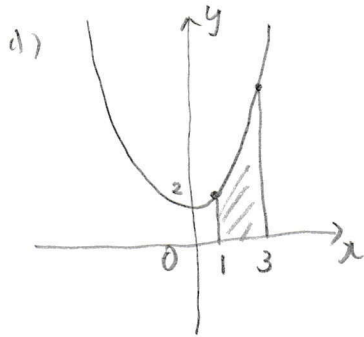
25 xとセフ  
 ビセフ |v|-1



次の曲線および直線で囲まれた面積を求めよ。

(1) 放物線  $y = x^2 + 2$ ,  $x$  軸, 2 直線  $x = 1, x = 3$

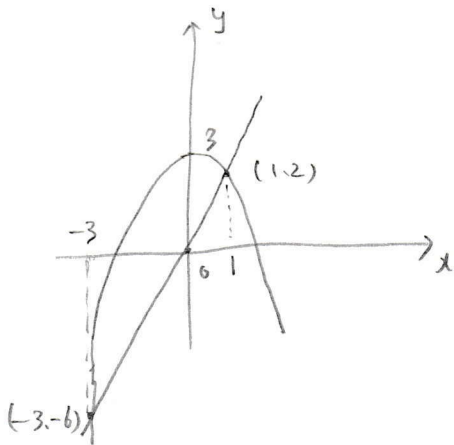
(2) 放物線  $y = -x^2 + 3$ , 直線  $y = 2x$



$$\begin{aligned} & \int_1^3 (x^2 + 2) dx \\ &= \left[ \frac{1}{3}x^3 + 2x \right]_1^3 \\ &= (9 + 6) - \left( \frac{1}{3} + 2 \right) \\ &= 15 - \frac{7}{3} \\ &= \frac{38}{3} \end{aligned}$$

(2)

$$\begin{aligned} -x^2 + 3 &= 2x \\ x^2 + 2x - 3 &= 0 \\ (x+3)(x-1) &= 0 \end{aligned}$$



$$\begin{aligned} & \int_{-3}^1 (-x^2 + 3 - 2x) dx \\ &= \left[ -\frac{1}{3}x^3 - x^2 + 3x \right]_{-3}^1 \\ &= \left( -\frac{1}{3} - 1 + 3 \right) - (9 - 9 - 9) \\ &= \frac{5}{3} + 9 \\ &= \frac{32}{3} \end{aligned}$$