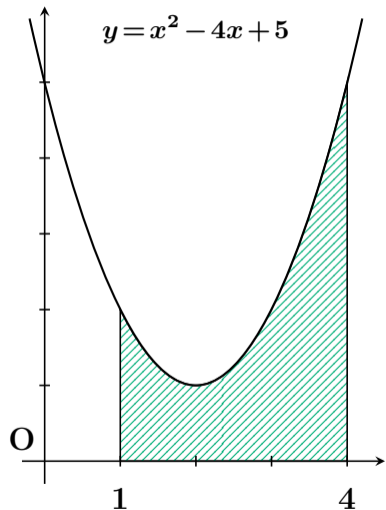
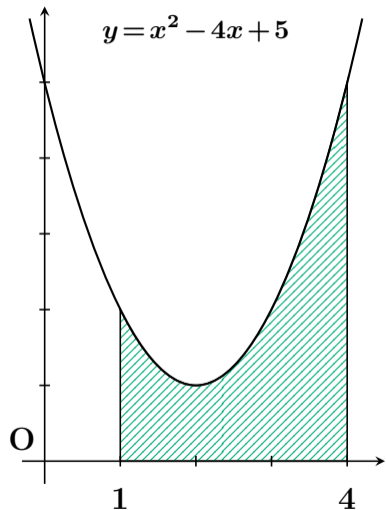


# $y = x^2 - 4x + 5$ , $x = 1$ , $x = 4$ , $x$ 軸 で囲む面積



$$\int_{\text{範囲の下}}^{\text{範囲の上}} (\text{上の式} - \text{下の式}) dx$$

# $y = x^2 - 4x + 5$ , $x = 1$ , $x = 4$ , $x$ 軸 で囲む面積

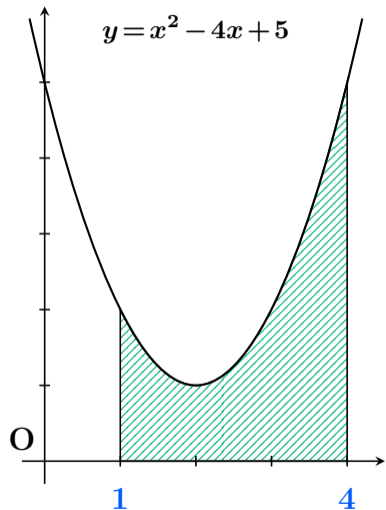


$$\int_{\text{範囲の下}}^{\text{範囲の上}} (\text{上の式} - \text{下の式}) dx$$

$$\text{上の式} = x^2 - 4x + 5$$

$$\text{下の式} = 0 \text{ (} x \text{ 軸)}$$

# $y = x^2 - 4x + 5$ , $x = 1$ , $x = 4$ , $x$ 軸 で囲む面積



$$\int_{\text{範囲の下}}^{\text{範囲の上}} (\text{上の式} - \text{下の式}) dx$$

$$\text{上の式} = x^2 - 4x + 5$$

$$\text{下の式} = 0 \text{ (} x \text{ 軸)}$$

$$\text{範囲の上} = 4$$

$$\text{範囲の下} = 1$$

$y = x^2 - 4x + 5$ ,  $x = 1$ ,  $x = 4$ ,  $x$  軸 で囲む面積

$$\int_1^4 \left( (x^2 - 4x + 5) - 0 \right) dx$$
$$= \int_1^4 (x^2 - 4x + 5) dx$$
$$= \left[ \frac{1}{3}x^3 - 2x^2 + 5x \right]_1^4$$

$y = x^2 - 4x + 5$ ,  $x = 1$ ,  $x = 4$ ,  $x$  軸 で囲む面積

$$= \left[ \frac{1}{3}x^3 - 2x^2 + 5x \right]_1^4$$

$$= \left( \frac{1}{3} \times 4^3 - 2 \times 4^2 + 5 \times 4 \right)$$

$$- \left( \frac{1}{3} \times 1^3 - 2 \times 1^2 + 5 \times 1 \right)$$

$y = x^2 - 4x + 5$ ,  $x = 1$ ,  $x = 4$ ,  $x$  軸 で囲む面積

$$\begin{aligned} &= \left( \frac{1}{3} \times 4^3 - 2 \times 4^2 + 5 \times 4 \right) \\ &\quad - \left( \frac{1}{3} \times 1^3 - 2 \times 1^2 + 5 \times 1 \right) \\ &= \left( \frac{64}{3} - 32 + 20 \right) - \left( \frac{1}{3} - 2 + 5 \right) \end{aligned}$$

$y = x^2 - 4x + 5$ ,  $x = 1$ ,  $x = 4$ ,  $x$  軸 で囲む面積

$$= \left( \frac{64}{3} - 32 + 20 \right) - \left( \frac{1}{3} - 2 + 5 \right)$$

$$= \left( \frac{64}{3} - 12 \right) - \left( \frac{1}{3} + 3 \right)$$

$$= \frac{64}{3} - 12 - \frac{1}{3} - 3$$

$y = x^2 - 4x + 5$ ,  $x = 1$ ,  $x = 4$ ,  $x$  軸 で囲む面積

$$= \frac{64}{3} - 12 - \frac{1}{3} - 3$$

$$= \frac{64 - 1}{3} - 15$$

$$= \frac{63}{3} - 15 = 21 - 15 = 6 \quad \boxed{\text{答}}$$