

**小テスト解答**No.25 2次関数  $ax^2+bx+c=a(x-p)^2+q$  の変形

$$\begin{aligned} \mathbf{1.} \quad (1) \quad y &= x^2 - 4x + 2 \\ &= (x-2)^2 - 2^2 + 2 \\ &= (x-2)^2 - 2 \end{aligned}$$

$$\begin{aligned} (2) \quad y &= x^2 + 3x + 1 \\ &= \left(x + \frac{3}{2}\right)^2 - \left(\frac{3}{2}\right)^2 - 1 \\ &= \left(x + \frac{3}{2}\right)^2 - \frac{13}{4} \end{aligned}$$

(各4点)

$$\begin{aligned} \mathbf{2.} \quad (1) \quad y &= 2x^2 - 8x + 4 \\ &= 2(x^2 - 4x) + 4 \\ &= 2\{(x-2)^2 - 2^2\} + 4 \\ &= 2(x-2)^2 - 4 \end{aligned}$$

$$\begin{aligned} (2) \quad y &= -3x^2 - 18x + 9 \\ &= -3(x^2 + 6x) + 9 \\ &= -3\{(x+3)^2 - 3^2\} + 9 \\ &= -3(x+3)^2 + 36 \end{aligned}$$

$$\begin{aligned} (3) \quad y &= 2x^2 - 6x + 3 \\ &= 2(x^2 - 3x) + 3 \\ &= 2\left\{\left(x - \frac{3}{2}\right)^2 - \left(\frac{3}{2}\right)^2\right\} + 3 \\ &= 2\left(x - \frac{3}{2}\right)^2 - \frac{3}{2} \end{aligned}$$

(各4点)