

2/cor-1

次の2次関数の頂点の座標と軸の式を求めなさい。

(1) $y = x^2 + 4x$

(2) $y = x^2 - 2x - 3$

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

(4) $y = 2x^2 + 4x + 8$

(5) $y = -x^2 + 2x$

(6) $y = -x^2 - 4x - 4$

(7) $y = -3x^2 + 3x + 1$

(8) $y = -2x^2 - x - 6$

(1) $y = (x+2)^2 - 4$

頂点 (-2, -4)

軸 $x = -2$

(2) $y = (x-1)^2 - 4$

頂点 (1, -4)

軸 $x = 1$

(3) $y = (x - \frac{1}{2})^2 - \frac{1}{4} + 1$

$y = (x - \frac{1}{2})^2 + \frac{3}{4}$

頂点 ($\frac{1}{2}, \frac{3}{4}$)

軸 $x = \frac{1}{2}$

(4) $y = 2(x^2 + 2x) + 8$

$y = 2(x+1)^2 + 6$

頂点 (-1, 6)

軸 $x = -1$

(5) $y = -(x^2 - 2x)$

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

頂点 (1, 1)

軸 $x = 1$

(6) $y = -(x^2 + 4x) - 4$

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

頂点 (-2, 0)

軸 $x = -2$

(7) $y = -3(x^2 - x) + 1$

$y = -3(x - \frac{1}{2})^2 + \frac{3}{4} + 1$

$y = -3(x - \frac{1}{2})^2 + \frac{7}{4}$

頂点 ($\frac{1}{2}, \frac{7}{4}$)

軸 $x = \frac{1}{2}$

(8) $y = -2(x^2 + \frac{1}{2}x) - 6$

$y = -2(x + \frac{1}{4})^2 + \frac{1}{8} - 6$ $\frac{48}{8}$

$y = -2(x + \frac{1}{4})^2 - \frac{47}{8}$

頂点 ($-\frac{1}{4}, -\frac{47}{8}$)

軸 $x = -\frac{1}{4}$