

平方完成 0105-1

1. 次の2次関数を平方完成しなさい。

(1)  $y = x^2 + 6x + 12$

(2)  $y = x^2 - 8x + 11$

(3)  $y = x^2 + 8x + 15$

(4)  $y = x^2 - 10x + 29$

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

(6)  $y = x^2 + 8x + 11$

(7)  $y = x^2 - 8x + 21$

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

(9)  $y = x^2 - 4x + 5$

(10)  $y = x^2 + 10x + 28$

2. 次の2次関数を平方完成しなさい。

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

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

(3)  $y = x^2 - 3x + 4$

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

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

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

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

(8)  $y = x^2 + 3x - 5$

(9)  $y = x^2 + 5x + 3$

(10)  $y = x^2 + 5x + 4$

3. 次の2次関数を平方完成しなさい。

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

(2)  $y = x^2 - 2x - 10$

(3)  $y = -2x^2 + 16x + 8$

(4)  $y = 5x^2 - 40x + 4$

(5)  $y = -3x^2 + 12x + 6$

(6)  $y = -5x^2 + 30x - 10$

(7)  $y = -5x^2 - 10x - 4$

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

(9)  $y = -4x^2 - 8x - 1$

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

4. 次の2次関数を平方完成しなさい。

(1)  $y = -2x^2 + 3x + 9$

(2)  $y = 4x^2 + 6x - 8$

(3)  $y = -4x^2 - 8x - 10$

(4)  $y = -x^2 - 10x - 6$

(5)  $y = 3x^2 - 5x - 3$

(6)  $y = x^2 + 2x + 3$

(7)  $y = -4x^2 + 6x + 3$

(8)  $y = -5x^2 - 5x - 7$

(9)  $y = 2x^2 - x - 10$

(10)  $y = 2x^2 - 10x - 5$

5. 次の2次関数を平方完成しなさい。

$$(1) y = \frac{2}{3}x^2 + \frac{4}{3}x + \frac{5}{2}$$

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

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

$$(4) y = -\frac{5}{4}x^2 - \frac{5}{3}x - \frac{3}{2}$$

$$(5) y = -\frac{5}{3}x^2 + \frac{5}{2}x$$

$$(6) y = x^2 + \frac{2}{3}x + \frac{5}{2}$$

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

$$(8) y = -\frac{3}{2}x^2 + \frac{7}{3}x + 2$$

$$(9) y = \frac{2}{3}x^2 - x + 2$$

$$(10) y = -\frac{1}{3}x^2 - x + 1$$

平方完成 0105-1

1. 次の2次関数を平方完成しなさい。

(1)  $y = x^2 + 6x + 12$

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

(2)  $y = x^2 - 8x + 11$

$$y = (x - 4)^2 - 5$$

(3)  $y = x^2 + 8x + 15$

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

(4)  $y = x^2 - 10x + 29$

$$y = (x - 5)^2 + 4$$

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

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

(6)  $y = x^2 + 8x + 11$

$$y = (x + 4)^2 - 5$$

(7)  $y = x^2 - 8x + 21$

$$y = (x - 4)^2 + 5$$

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

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

(9)  $y = x^2 - 4x + 5$

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

(10)  $y = x^2 + 10x + 28$

$$y = (x + 5)^2 + 3$$

2. 次の2次関数を平方完成しなさい。

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

$$y = \left(x - \frac{1}{2}\right)^2 + \frac{19}{4}$$

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

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

(3)  $y = x^2 - 3x + 4$

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

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

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

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

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

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

$$y = \left(x - \frac{3}{2}\right)^2 - \frac{5}{4}$$

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

$$y = \left(x - \frac{5}{2}\right)^2 - \frac{45}{4}$$

(8)  $y = x^2 + 3x - 5$

$$y = \left(x + \frac{3}{2}\right)^2 - \frac{29}{4}$$

(9)  $y = x^2 + 5x + 3$

$$y = \left(x + \frac{5}{2}\right)^2 - \frac{13}{4}$$

(10)  $y = x^2 + 5x + 4$

$$y = \left(x + \frac{5}{2}\right)^2 - \frac{9}{4}$$

3. 次の2次関数を平方完成しなさい。

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

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

(2)  $y = x^2 - 2x - 10$

$$y = (x - 1)^2 - 11$$

(3)  $y = -2x^2 + 16x + 8$

$$y = -2(x - 4)^2 + 40$$

(4)  $y = 5x^2 - 40x + 4$

$$y = 5(x - 4)^2 - 76$$

(5)  $y = -3x^2 + 12x + 6$

$$y = -3(x - 2)^2 + 18$$

(6)  $y = -5x^2 + 30x - 10$

$$y = -5(x - 3)^2 + 35$$

(7)  $y = -5x^2 - 10x - 4$

$$y = -5(x + 1)^2 + 1$$

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

$$y = (x - 3)^2 - 9$$

(9)  $y = -4x^2 - 8x - 1$

$$y = -4(x + 1)^2 + 3$$

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

$$y = -(x + 1)^2 - 5$$



4. 次の2次関数を平方完成しなさい。

(1)  $y = -2x^2 + 3x + 9$

$$y = -2 \left( x - \frac{3}{4} \right)^2 + \frac{81}{8}$$

(2)  $y = 4x^2 + 6x - 8$

$$y = 4 \left( x + \frac{3}{4} \right)^2 - \frac{41}{4}$$

(3)  $y = -4x^2 - 8x - 10$

$$y = -4(x + 1)^2 - 6$$

(4)  $y = -x^2 - 10x - 6$

$$y = -(x + 5)^2 + 19$$

(5)  $y = 3x^2 - 5x - 3$

$$y = 3 \left( x - \frac{5}{6} \right)^2 - \frac{61}{12}$$

(6)  $y = x^2 + 2x + 3$

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

(7)  $y = -4x^2 + 6x + 3$

$$y = -4 \left( x - \frac{3}{4} \right)^2 + \frac{21}{4}$$

(8)  $y = -5x^2 - 5x - 7$

$$y = -5 \left( x + \frac{1}{2} \right)^2 - \frac{23}{4}$$

(9)  $y = 2x^2 - x - 10$

$$y = 2 \left( x - \frac{1}{4} \right)^2 - \frac{81}{8}$$

(10)  $y = 2x^2 - 10x - 5$

$$y = 2 \left( x - \frac{5}{2} \right)^2 - \frac{35}{2}$$

5. 次の2次関数を平方完成しなさい。

$$(1) y = \frac{2}{3}x^2 + \frac{4}{3}x + \frac{5}{2}$$

$$y = \frac{2}{3}(x+1)^2 + \frac{11}{6}$$

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

$$y = \frac{1}{3}\left(x + \frac{7}{2}\right)^2 - \frac{49}{12}$$

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

$$y = -\frac{3}{2}\left(x - \frac{1}{3}\right)^2 + \frac{5}{6}$$

$$(4) y = -\frac{5}{4}x^2 - \frac{5}{3}x - \frac{3}{2}$$

$$y = -\frac{5}{4}\left(x + \frac{2}{3}\right)^2 - \frac{17}{18}$$

$$(5) y = -\frac{5}{3}x^2 + \frac{5}{2}x$$

$$y = -\frac{5}{3}\left(x - \frac{3}{4}\right)^2 + \frac{15}{16}$$

$$(6) y = x^2 + \frac{2}{3}x + \frac{5}{2}$$

$$y = \left(x + \frac{1}{3}\right)^2 + \frac{43}{18}$$

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

$$y = \frac{2}{3}\left(x - \frac{3}{2}\right)^2 - \frac{1}{6}$$

$$(8) y = -\frac{3}{2}x^2 + \frac{7}{3}x + 2$$

$$y = -\frac{3}{2}\left(x - \frac{7}{9}\right)^2 + \frac{157}{54}$$

$$(9) y = \frac{2}{3}x^2 - x + 2$$

$$y = \frac{2}{3}\left(x - \frac{3}{4}\right)^2 + \frac{13}{8}$$

$$(10) y = -\frac{1}{3}x^2 - x + 1$$

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