

平方完成 0105-2

1. 次の2次関数を平方完成しなさい。

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

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

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

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

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

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

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

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

(9) $y = x^2 - 10x + 27$

(10) $y = x^2 + 8x + 20$

2. 次の2次関数を平方完成しなさい。

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

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

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

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

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

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

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

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

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

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

3. 次の2次関数を平方完成しなさい。

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

(2) $y = -x^2 - 6x + 9$

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

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

(5) $y = 5x^2 - 40x - 3$

(6) $y = -3x^2 + 18x + 9$

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

(8) $y = 2x^2 + 16x + 9$

(9) $y = -3x^2 - 24x + 9$

(10) $y = -2x^2 + 16x - 1$

4. 次の2次関数を平方完成しなさい。

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

(2) $y = -5x^2 - 8x + 10$

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

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

(5) $y = 3x^2 - 3x - 10$

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

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

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

(9) $y = -3x^2 - 10x$

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

5. 次の2次関数を平方完成しなさい。

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

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

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

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

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

$$(6) y = -\frac{1}{4}x^2 - \frac{5}{2}x + \frac{1}{2}$$

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

$$(8) y = \frac{4}{3}x^2 + \frac{7}{3}x + \frac{4}{3}$$

$$(9) y = -\frac{3}{2}x^2 - \frac{3}{2}x + \frac{1}{2}$$

$$(10) y = -\frac{1}{2}x^2 - \frac{7}{3}x + \frac{7}{3}$$

平方完成 0105-2

1. 次の2次関数を平方完成しなさい。

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(9) $y = x^2 - 10x + 27$

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

(10) $y = x^2 + 8x + 20$

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

2. 次の2次関数を平方完成しなさい。

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$y = \left(x + \frac{1}{2}\right)^2 - \frac{21}{4}$$

3. 次の2次関数を平方完成しなさい。

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

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

(2) $y = -x^2 - 6x + 9$

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

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

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

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

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

(5) $y = 5x^2 - 40x - 3$

$$y = 5(x - 4)^2 - 83$$

(6) $y = -3x^2 + 18x + 9$

$$y = -3(x - 3)^2 + 36$$

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

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

(8) $y = 2x^2 + 16x + 9$

$$y = 2(x + 4)^2 - 23$$

(9) $y = -3x^2 - 24x + 9$

$$y = -3(x + 4)^2 + 57$$

(10) $y = -2x^2 + 16x - 1$

$$y = -2(x - 4)^2 + 31$$

4. 次の2次関数を平方完成しなさい。

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

$$y = -5 \left(x - \frac{1}{5} \right)^2 + \frac{11}{5}$$

(2) $y = -5x^2 - 8x + 10$

$$y = -5 \left(x + \frac{4}{5} \right)^2 + \frac{66}{5}$$

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

$$y = 4 \left(x - \frac{3}{8} \right)^2 + \frac{119}{16}$$

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

$$y = -5 \left(x + \frac{1}{2} \right)^2 - \frac{31}{4}$$

(5) $y = 3x^2 - 3x - 10$

$$y = 3 \left(x - \frac{1}{2} \right)^2 - \frac{43}{4}$$

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

$$y = 2 \left(x + \frac{5}{4} \right)^2 - \frac{25}{8}$$

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

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

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

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

(9) $y = -3x^2 - 10x$

$$y = -3 \left(x + \frac{5}{3} \right)^2 + \frac{25}{3}$$

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

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

5. 次の2次関数を平方完成しなさい。

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

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

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

$$y = -\frac{3}{4}\left(x - \frac{14}{9}\right)^2 + \frac{49}{27}$$

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

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

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

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

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

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

$$(6) y = -\frac{1}{4}x^2 - \frac{5}{2}x + \frac{1}{2}$$

$$y = -\frac{1}{4}(x + 5)^2 + \frac{27}{4}$$

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

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

$$(8) y = \frac{4}{3}x^2 + \frac{7}{3}x + \frac{4}{3}$$

$$y = \frac{4}{3}\left(x + \frac{7}{8}\right)^2 + \frac{5}{16}$$

$$(9) y = -\frac{3}{2}x^2 - \frac{3}{2}x + \frac{1}{2}$$

$$y = -\frac{3}{2}\left(x + \frac{1}{2}\right)^2 + \frac{7}{8}$$

$$(10) y = -\frac{1}{2}x^2 - \frac{7}{3}x + \frac{7}{3}$$

$$y = -\frac{1}{2}\left(x + \frac{7}{3}\right)^2 + \frac{91}{18}$$