

1 2 次方程式/基本

次の方程式を解け.

- (1) $x^2 - 36 = 0$ $x = \pm 6$
 (2) $x^2 = 7$ $x = \pm\sqrt{7}$
 (3) $x^2 - 49 = 0$ $x = \pm 7$
 (4) $x^2 - 1 = 0$ $x = \pm 1$
 (5) $x^2 - 64 = 0$ $x = \pm 8$
 (6) $(x - 3)^2 - 12 = 0$ $x = 3 \pm 2\sqrt{3}$
 (7) $(x - 4)^2 = 4$ $x = 6, 2$
 (8) $(x - 1)^2 - 5 = 0$ $x = 1 \pm \sqrt{5}$
 (9) $(x - 5)^2 - 3 = 0$ $x = 5 \pm \sqrt{3}$
 (10) $(x + 2)^2 - 25 = 0$ $x = 3, -7$

2 2 次方程式/因数分解

次の方程式を解け.

- (1) $x^2 - 4x + 4 = 0$
 $(x - 2)^2 = 0$ $x = 2$
 (2) $x^2 - 4x - 5 = 0$
 $(x + 1)(x - 5) = 0$ $x = 5, -1$
 (3) $x^2 - 12x + 32 = 0$
 $(x - 4)(x - 8) = 0$ $x = 8, 4$
 (4) $x^2 + 5x - 24 = 0$
 $(x - 3)(x + 8) = 0$ $x = 3, -8$
 (5) $x^2 + 11x + 28 = 0$
 $(x + 4)(x + 7) = 0$ $x = -4, -7$
 (6) $x^2 - 3x - 40 = 0$
 $(x + 5)(x - 8) = 0$ $x = 8, -5$
 (7) $x^2 - 2x - 8 = 0$
 $(x + 2)(x - 4) = 0$ $x = 4, -2$
 (8) $x^2 - 7x + 6 = 0$
 $(x - 1)(x - 6) = 0$ $x = 6, 1$
 (9) $x^2 - 4x - 21 = 0$

- $(x + 3)(x - 7) = 0$ $x = 7, -3$
 (10) $x^2 - 13x + 36 = 0$
 $(x - 4)(x - 9) = 0$ $x = 9, 4$
 (11) $x^2 + 10x + 9 = 0$
 $(x + 1)(x + 9) = 0$ $x = -1, -9$
 (12) $x^2 - 14x + 49 = 0$
 $(x - 7)^2 = 0$ $x = 7$
 (13) $x^2 - 4x + 3 = 0$
 $(x - 1)(x - 3) = 0$ $x = 3, 1$
 (14) $x^2 - x - 6 = 0$
 $(x + 2)(x - 3) = 0$ $x = 3, -2$
 (15) $x^2 + 7x + 10 = 0$
 $(x + 2)(x + 5) = 0$ $x = -2, -5$
 (16) $x^2 - 5x + 6 = 0$
 $(x - 2)(x - 3) = 0$ $x = 3, 2$
 (17) $x^2 - 7x + 12 = 0$
 $(x - 3)(x - 4) = 0$ $x = 4, 3$
 (18) $x^2 + 2x + 1 = 0$
 $(x + 1)^2 = 0$ $x = -1$
 (19) $x^2 - 6x + 8 = 0$
 $(x - 2)(x - 4) = 0$ $x = 4, 2$
 (20) $x^2 + 2x - 35 = 0$
 $(x - 5)(x + 7) = 0$ $x = 5, -7$

3 2 次方程式/平方完成

次の空欄を埋めよ.

(1)

$$\begin{aligned}
 x^2 - 4x + 2 &= 0 \\
 (x - \square)^2 - \square + 2 &= 0 \\
 (x - \square)^2 &= \square \\
 x - \square &= \pm\sqrt{\square} \\
 x &= \square
 \end{aligned}$$

答. 2, 4, 2, 2, 2, 2, $2 \pm \sqrt{2}$

(2)

$$\begin{aligned}
 x^2 + 6x - 1 &= 0 \\
 (x + \square)^2 - \square - 1 &= 0 \\
 (x + \square)^2 &= \square \\
 x + \square &= \pm\sqrt{\square} \\
 x &= \square
 \end{aligned}$$

答. 3, 9, 3, 10, 3, 10, $-3 \pm \sqrt{10}$

(3)

$$\begin{aligned}
 x^2 - 5x - 1 &= 0 \\
 (x - \square)^2 - \square - 1 &= 0 \\
 (x - \square)^2 &= \square \\
 x - \square &= \pm\sqrt{\square} \\
 x &= \square
 \end{aligned}$$

答. $\frac{5}{2}, \frac{25}{4}, \frac{5}{2}, \frac{29}{4}, \frac{5}{2}, \frac{29}{4}, \frac{5 \pm \sqrt{29}}{2}$

4 2次方程式/いろいろ

次の方程式を解け.

- (1) $x^2 - 10x + 21 = 0$ $x = 7, 3$
- (2) $x^2 - 10x + 9 = 0$ $x = 9, 1$
- (3) $x^2 + 3x - 3 = 0$ $x = \frac{-3 \pm \sqrt{21}}{2}$
- (4) $x^2 + 5x + 2 = 0$ $x = \frac{-5 \pm \sqrt{17}}{2}$
- (5) $x^2 + 2x - 1 = 0$ $x = -1 \pm \sqrt{2}$
- (6) $x^2 + 4x - 6 = 0$ $x = -2 \pm \sqrt{10}$
- (7) $4x^2 + 13x + 9 = 0$ $x = -1, -\frac{9}{4}$
- (8) $12x^2 - x - 1 = 0$ $x = \frac{1}{3}, -\frac{1}{4}$
- (9) $x^2 - 3x - 5 = 0$ $x = \frac{3 \pm \sqrt{29}}{2}$
- (10) $x^2 - 6x - 4 = 0$ $x = 3 \pm \sqrt{13}$
- (11) $x^2 - 3x - 2 = 0$ $x = \frac{3 \pm \sqrt{17}}{2}$
- (12) $4x^2 - 3x - 27 = 0$ $x = 3, -\frac{9}{4}$
- (13) $x^2 + 4x - 1 = 0$ $x = -2 \pm \sqrt{5}$
- (14) $2x^2 - x - 3 = 0$ $x = \frac{3}{2}, -1$
- (15) $x^2 - 8x + 16 = 0$ $x = 4$