

問題

問題 1. 次の二次方程式を解きなさい。

(1) $x^2 = 4$

(2) $x^2 = 16$

(3) $x^2 = 5$

(4) $x^2 = 12$

(5) $x^2 - 18 = 0$

(6) $x^2 - 9 = 0$

(7) $2x^2 = 18$

(8) $3x^2 = 15$

(9) $3x^2 - 60 = 0$

(10) $3x^2 - 27 = 0$

(11) $4x^2 - 5 = 0$

(12) $9x^2 - 4 = 0$

問題 2. 次の二次方程式を解きなさい。

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

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

(3) $(x + 2)^2 - 16 = 0$

(4) $(x - 5)^2 - 9 = 0$

(5) $2(x - 2)^2 = 18$

(6) $3(x + 3)^2 = 12$

(7) $3(x - 6)^2 - 27 = 0$

(8) $2(x + 3)^2 - 8 = 0$

問題 3. 次の二次方程式を解きなさい。

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

(2) $(x + 5)^2 = 12$

(3) $(x + 1)^2 - 20 = 0$

(4) $(x - 7)^2 - 7 = 0$

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

(6) $3(x + 4)^2 = 24$

(7) $2(x - 5)^2 - 24 = 0$

(8) $5(x + 6)^2 - 25 = 0$

問題 4. 次の二次方程式を解きなさい。

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

(2) $x^2 - 6x = 3$

(3) $x^2 - 2x - 7 = 0$

(4) $x^2 + 4x - 1 = 0$

(5) $x^2 + 6x + 2 = 0$

(6) $x^2 - 4x + 2 = 0$

練習

練習 1. 次の二次方程式を解きなさい。

(1) $x^2 = 9$

(2) $x^2 = 25$

(3) $x^2 = 18$

(4) $x^2 = 15$

(5) $x^2 - 36 = 0$

(6) $x^2 - 8 = 0$

(7) $3x^2 = 15$

(8) $3x^2 = 27$

(9) $4x^2 - 40 = 0$

(10) $5x^2 - 80 = 0$

(11) $4x^2 - 9 = 0$

(12) $9x^2 - 5 = 0$

練習 2. 次の二次方程式を解きなさい。

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

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

(3) $(x + 4)^2 - 25 = 0$

(4) $(x - 2)^2 - 4 = 0$

(5) $2(x - 5)^2 = 50$

(6) $4(x + 2)^2 = 64$

(7) $3(x - 2)^2 - 75 = 0$

(8) $2(x + 2)^2 - 2 = 0$

練習 3. 次の二次方程式を解きなさい。

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

(2) $(x + 3)^2 = 27$

(3) $(x + 4)^2 - 28 = 0$

(4) $(x - 1)^2 - 6 = 0$

(5) $2(x - 5)^2 = 22$

(6) $3(x + 1)^2 = 36$

(7) $2(x - 1)^2 - 40 = 0$

(8) $5(x + 2)^2 - 50 = 0$

練習 4. 次の二次方程式を解きなさい。

(1) $x^2 - 2x = 7$

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

(3) $x^2 - 4x - 1 = 0$

(4) $x^2 + 6x - 3 = 0$

(5) $x^2 + 6x + 1 = 0$

(6) $x^2 - 4x + 1 = 0$

解答

問題 1.

(1) $x = \pm 2$ (2) $x = \pm 4$ (3) $x = \pm\sqrt{5}$ (4) $x = \pm 2\sqrt{3}$ (5) $x = \pm 3\sqrt{2}$
(6) $x = \pm 3$ (7) $x = \pm 3$ (8) $x = \pm\sqrt{5}$ (9) $x = \pm 2\sqrt{5}$ (10) $x = \pm 3$
(11) $x = \pm\frac{\sqrt{5}}{2}$ (12) $x = \pm\frac{2}{3}$

問題 2.

(1) $x = -3, 1$ (2) $x = 0, 6$ (3) $x = -6, 2$ (4) $x = 2, 8$ (5) $x = -1, 5$
(6) $x = -5, -1$ (7) $x = 3, 9$ (8) $x = -5, -1$

問題 3.

(1) $x = 2 \pm\sqrt{5}$ (2) $x = -5 \pm 2\sqrt{3}$ (3) $x = -1 \pm 2\sqrt{5}$ (4) $x = 7 \pm\sqrt{7}$
(5) $x = 3 \pm\sqrt{5}$ (6) $x = -4 \pm 2\sqrt{2}$ (7) $x = 5 \pm 2\sqrt{3}$ (8) $x = -6 \pm\sqrt{5}$

問題 4.

(1) $x = -2 \pm\sqrt{10}$ (2) $x = 3 \pm 2\sqrt{3}$ (3) $x = 1 \pm 2\sqrt{2}$ (4) $x = -2 \pm\sqrt{5}$
(5) $x = -3 \pm\sqrt{7}$ (6) $x = 2 \pm\sqrt{2}$

練習 1.

(1) $x = \pm 3$ (2) $x = \pm 5$ (3) $x = \pm 3\sqrt{2}$ (4) $x = \pm\sqrt{15}$ (5) $x = \pm 6$
(6) $x = \pm 2\sqrt{2}$ (7) $x = \pm\sqrt{5}$ (8) $x = \pm 3$ (9) $x = \pm\sqrt{10}$ (10) $x = \pm 4$
(11) $x = \pm\frac{3}{2}$ (12) $x = \pm\frac{\sqrt{5}}{3}$

練習 2.

(1) $x = -6, 0$ (2) $x = -1, 3$ (3) $x = -9, 1$ (4) $x = 0, 4$ (5) $x = 0, 10$
(6) $x = -6, 2$ (7) $x = -3, 7$ (8) $x = -3, -1$

練習 3.

(1) $x = 5 \pm\sqrt{7}$ (2) $x = -3 \pm 3\sqrt{3}$ (3) $x = -4 \pm 2\sqrt{7}$ (4) $x = 1 \pm\sqrt{6}$
(5) $x = 5 \pm\sqrt{11}$ (6) $x = -1 \pm 2\sqrt{3}$ (7) $x = 1 \pm 2\sqrt{5}$ (8) $x = -2 \pm\sqrt{10}$

練習 4.

(1) $x = 1 \pm 2\sqrt{2}$ (2) $x = -2 \pm\sqrt{6}$ (3) $x = 2 \pm\sqrt{5}$ (4) $x = -3 \pm 2\sqrt{3}$
(5) $x = -3 \pm 2\sqrt{2}$ (6) $x = 2 \pm\sqrt{3}$