

P 8 3 3章の基本のたしかめ (宿題として 20分程度)

1.

$$x^2 - 4x + 3 = 0$$

$$(x - 3)(x - 1) = 0$$

$$x = 1, 3$$

2.

$$(1) x^2 - 7 = 0 \quad x^2 = 7 \quad x = \pm \sqrt{7}$$

$$(2) 4x^2 = 25 \quad x^2 = \frac{25}{4} \quad x = \pm \frac{5}{2}$$

$$(3) (x - 4)^2 = 49 \quad x - 4 = \pm 7 \quad x = \pm 7 + 4 = 11, -3$$

$$(4) (x + 2)^2 = 11 \quad x + 2 = \pm \sqrt{11} \quad x = -2 \pm \sqrt{11}$$

3.

$$x^2 - 12x + 36 = 0$$

数の項を移項して

$$x^2 - 12x = -36$$

左辺を $(x + m)^2$ の形にするために36を両辺に足して

$$x^2 - 12x + 36 = -36 + 36$$

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

$$x - 6 = \pm \sqrt{0}$$

$$x = 6 \pm \sqrt{0}$$

4.

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

$$x = \frac{-1 \pm \sqrt{1^2 - 4 \times 1 \times (-1)}}{2} = \frac{-1 \pm \sqrt{5}}{2}$$

$$(2) x^2 - 4x + 2 = 0 \quad x = \frac{4 \pm \sqrt{(-4)^2 - 4 \times 1 \times 2}}{2 \times 1}$$

$$= \frac{4 \pm \sqrt{8}}{2} = \frac{4 \pm 2\sqrt{2}}{2} \quad \text{3つそろって約分}$$

$$= 2 \pm \sqrt{2}$$

$$(3) \quad 3x^2 + 9x + 5 = 0 \quad x = \frac{-9 \pm \sqrt{9^2 - 4 \times 3 \times 5}}{2 \times 3}$$

$$= \frac{-9 \pm \sqrt{21}}{6}$$

$$(4) \quad 5x^2 - 7x + 2 = 0 \quad x = \frac{7 \pm \sqrt{(-7)^2 - 4 \times 5 \times 2}}{2 \times 5}$$

$$= \frac{7 \pm \sqrt{9}}{10} = \frac{7 \pm 3}{10} = 1, \frac{2}{5}$$

5.

$$(1) \quad (x-6)(x+2) = 0$$

$$x = 6, -2$$

$$(2) \quad x^2 - 5x + 4 = 0$$

$$(x-4)(x-1) = 0$$

$$x = 1, 4$$

$$(3) \quad x^2 + 3x = 0$$

$$x(x+3) = 0$$

$$x = 0, -3$$

$$(4) \quad x^2 - 4x + 4 = 0$$

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

$$x = 2$$

6.

たて $\dots x$

よこ $\dots x + 3$

$$x(x+3) = 40$$

$$x^2 + 3x - 40 = 0$$

$$(x+8)(x-5) = 0$$

$$x = 5, -8 \quad x \text{は正なので } 5 \text{ cm}$$

たて 5 cm よこ 8 cm