

1 次の2次方程式を解の公式を使って解きなさい。

①  $x^2 + 4x + 2 = 0$

②  $2x^2 + 6x - 2 = 0$

③  $3x^2 - 4x + 1 = 0$

④  $4x^2 - 2x - 5 = 0$

1 次の2次方程式を解の公式を使って解きなさい。

①  $x^2 + 4x + 2 = 0$

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

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

$$= \frac{-4 \pm \sqrt{16 - 8}}{2}$$

$$= \frac{-4 \pm \sqrt{8}}{2}$$

$$= \frac{-4 \pm 2\sqrt{2}}{2}$$

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

②  $2x^2 + 6x - 2 = 0$

$$x = \frac{-3 \pm \sqrt{13}}{2}$$

$$x = \frac{-6 \pm \sqrt{6^2 - 4 \times 2 \times (-2)}}{2 \times 2}$$

$$= \frac{-6 \pm \sqrt{36 + 16}}{4}$$

$$= \frac{-6 \pm \sqrt{52}}{4}$$

$$= \frac{-6 \pm 2\sqrt{13}}{4}$$

$$x = \frac{-3 \pm \sqrt{13}}{2}$$

③  $3x^2 - 4x + 1 = 0$

$$x = \frac{1}{3}, x = 1$$

$$x = \frac{4 \pm \sqrt{(-4)^2 - 4 \times 3 \times 1}}{2 \times 3}$$

$$= \frac{4 \pm \sqrt{16 - 12}}{6}$$

$$= \frac{4 \pm \sqrt{4}}{6}$$

$$= \frac{4 \pm 2}{6}$$

$$x = \frac{1}{3}, x = 1$$

④  $4x^2 - 2x - 5 = 0$

$$x = \frac{1 \pm \sqrt{21}}{4}$$

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

$$= \frac{2 \pm \sqrt{4 + 80}}{8}$$

$$= \frac{2 \pm \sqrt{84}}{8}$$

$$= \frac{2 \pm 2\sqrt{21}}{8}$$

$$x = \frac{1 \pm \sqrt{21}}{4}$$