

■ 次の2次方程式を解きなさい。

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

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

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

(7) $3x^2 + 3x - 5 = 0$

(3) $x^2 + 8x + 5 = 0$

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

(4) $2x^2 - 9x + 3 = 0$

(9) $4x^2 + 8x + 1 = 0$

(5) $2x^2 + 8x + 1 = 0$

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

■ 次の2次方程式を解きなさい。

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

$$\begin{aligned}x &= \frac{1 \pm \sqrt{1 + 12}}{2} \\&= \frac{1 \pm \sqrt{13}}{2}\end{aligned}$$

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

$$\begin{aligned}x &= \frac{-2 \pm \sqrt{4 + 16}}{2} \\&= \frac{-2 \pm 2\sqrt{5}}{2} \\&= -1 \pm \sqrt{5}\end{aligned}$$

(3) $x^2 + 8x + 5 = 0$

$$\begin{aligned}x &= \frac{-8 \pm \sqrt{64 - 20}}{2} \\&= \frac{-8 \pm 2\sqrt{11}}{2} \\&= -4 \pm \sqrt{11}\end{aligned}$$

(4) $2x^2 - 9x + 3 = 0$

$$\begin{aligned}x &= \frac{9 \pm \sqrt{81 - 24}}{4} \\&= \frac{9 \pm \sqrt{57}}{4}\end{aligned}$$

(5) $2x^2 + 8x + 1 = 0$

$$\begin{aligned}x &= \frac{-8 \pm \sqrt{64 - 8}}{4} \\&= \frac{-8 \pm 2\sqrt{14}}{4} \\&= \frac{-4 \pm \sqrt{14}}{2}\end{aligned}$$

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

$$\begin{aligned}x &= \frac{4 \pm \sqrt{16 + 24}}{4} \\&= \frac{4 \pm 2\sqrt{10}}{4} \\&= \frac{2 \pm \sqrt{10}}{2}\end{aligned}$$

(7) $3x^2 + 3x - 5 = 0$

$$\begin{aligned}x &= \frac{-3 \pm \sqrt{9 + 60}}{6} \\&= \frac{-3 \pm \sqrt{69}}{6}\end{aligned}$$

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

$$\begin{aligned}x &= \frac{2 \pm \sqrt{4 + 24}}{6} \\&= \frac{2 \pm 2\sqrt{7}}{6} \\&= \frac{1 \pm \sqrt{7}}{3}\end{aligned}$$

(9) $4x^2 + 8x + 1 = 0$

$$\begin{aligned}x &= \frac{-8 \pm \sqrt{64 - 16}}{8} \\&= \frac{-8 \pm 4\sqrt{3}}{8} \\&= \frac{-2 \pm \sqrt{3}}{2}\end{aligned}$$

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

$$\begin{aligned}x &= \frac{2 \pm \sqrt{4 + 40}}{10} \\&= \frac{2 \pm 2\sqrt{11}}{10} \\&= \frac{1 \pm \sqrt{11}}{5}\end{aligned}$$