

平方根を利用した解法

NO.3

名前

/ 点

1

次の2次方程式を解きなさい。

① $2x^2 = 200$

② $-6x^2 = -48$

③ $\frac{1}{4}x^2 = \frac{1}{9}$

④ $\frac{9}{4}x^2 = \frac{8}{9}$

⑤ $18x^2 - 12 = 0$

⑥ $-25x^2 + 4 = 0$

2

次の2次方程式を解きなさい。

① $(x - 3)^2 = 64$

② $(x - 2)^2 = \frac{4}{9}$

③ $5(x - 2)^2 - 40 = 0$

解答

1

$$\begin{aligned} \textcircled{1} \quad 2x^2 &= 200 \\ x^2 &= 100 \\ x &= \pm 10 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad -6x^2 &= -48 \\ x^2 &= 8 \\ x &= \pm 2\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad \frac{1}{4}x^2 &= \frac{1}{9} \\ x^2 &= \frac{4}{9} \\ x &= \pm \frac{2}{3} \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad \frac{9}{4}x^2 &= \frac{8}{9} \\ x^2 &= \frac{32}{81} \\ x &= \pm \frac{4\sqrt{2}}{9} \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad 18x^2 - 12 &= 0 \\ 18x^2 &= 12 \\ x^2 &= \frac{6}{9} \\ x &= \pm \frac{\sqrt{6}}{3} \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad -25x^2 + 4 &= 0 \\ 25x^2 &= 4 \\ x^2 &= \frac{4}{25} \\ x &= \pm \frac{2}{5} \end{aligned}$$

2

$$\begin{aligned} \textcircled{1} \quad (x - 3)^2 &= 64 \\ x - 3 &= \pm 8 \\ x - 3 &= 4 \quad \text{のとき} & \quad x &= 7 \\ x - 3 &= -4 \quad \text{のとき} & \quad x &= -1 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad (x - 2)^2 &= \frac{4}{9} \\ x - 2 &= \pm \frac{2}{3} \\ x - 2 &= \frac{2}{3} \quad \text{のとき} & \quad x &= \frac{8}{3} \\ x - 2 &= -\frac{2}{3} \quad \text{のとき} & \quad x &= \frac{4}{3} \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad 5(x + 2)^2 &= 40 \\ (x + 2)^2 &= 8 \\ x + 2 &= \pm \sqrt{8} \\ x &= -2 \pm 2\sqrt{2} \end{aligned}$$