

二次方程式 すべて 1

3年 組 番・氏名

◆次の二次方程式を解け。

$$\textcircled{1} \quad 3x^2 = 27$$

$$\begin{aligned} x^2 &= 9 \\ x &= \pm 3 \end{aligned}$$

$$\textcircled{2} \quad (x-2)^2 = 7$$

$$\begin{aligned} x-2 &= \pm \sqrt{7} \\ x &= 2 \pm \sqrt{7} \end{aligned}$$

$$\textcircled{3} \quad x^2 - 8x + 16 = 0$$

$$\begin{aligned} (x-4)^2 &= 0 \\ x &= 4 \end{aligned}$$

$$\textcircled{4} \quad x^2 - 3x - 18 = 0$$

$$\begin{aligned} (x-6)(x+3) &= 0 \\ x &= 6, -3 \end{aligned}$$

$$\textcircled{5} \quad x^2 - 36 = 0$$

$$\begin{aligned} (x+6)(x-6) &= 0 \\ x &= \pm 6 \end{aligned}$$

$$\textcircled{6} \quad x^2 - x - 72 = 0$$

$$\begin{aligned} (x+8)(x-9) &= 0 \\ x &= -8, 9 \end{aligned}$$

$$\textcircled{7} \quad x^2 + 5x + 2 = 0$$

$$\begin{aligned} x &= \frac{-5 \pm \sqrt{5^2 - 4 \times 1 \times 2}}{2 \times 1} \\ &= \frac{-5 \pm \sqrt{25 - 8}}{2} = \frac{-5 \pm \sqrt{17}}{2} \end{aligned}$$

$$\textcircled{8} \quad 3x^2 - 9x + 2 = 0$$

$$\begin{aligned} x &= \frac{-(-9) \pm \sqrt{(-9)^2 - 4 \times 3 \times 2}}{2 \times 3} \\ &= \frac{9 \pm \sqrt{81 - 24}}{6} = \frac{9 \pm \sqrt{57}}{6} \end{aligned}$$

$$\textcircled{9} \quad x^2 + 8x + 5 = 0$$

$$\begin{aligned} x &= \frac{-8 \pm \sqrt{8^2 - 4 \times 1 \times 5}}{2 \times 1} = \frac{-8 \pm \sqrt{64 - 20}}{2} \\ &= \frac{-8 \pm \sqrt{44}}{2} = \frac{-8 \pm 2\sqrt{11}}{2} \\ &= -4 \pm \sqrt{11} \end{aligned}$$

$$\textcircled{10} \quad 5x^2 + 3x - 2 = 0$$

$$\begin{aligned} x &= \frac{-3 \pm \sqrt{3^2 - 4 \times 5 \times (-2)}}{2 \times 5} = \frac{-3 \pm \sqrt{9 + 40}}{10} \\ &= \frac{-3 \pm \sqrt{49}}{10} = \frac{-3 \pm 7}{10} \\ &= \frac{4}{10}, \frac{-10}{10} \quad x = \frac{2}{5}, -1 \end{aligned}$$

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二次方程式 すべて 2

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◆次の二次方程式を解け。

$$\textcircled{1} \quad 2x^2 - 32 = 0$$

$$\begin{aligned} 2x^2 &= 32 \\ x^2 &= 16 \\ x &= \pm 4 \end{aligned}$$

$$\textcircled{2} \quad (x+3)^2 = 25$$

$$\begin{aligned} x+3 &= \pm 5 \\ x &= -3 \pm 5 \\ x &= 2, -8 \end{aligned}$$

$$\textcircled{3} \quad x^2 - 4x - 45 = 0$$

$$\begin{aligned} (x-9)(x+5) &= 0 \\ x &= 9, -5 \end{aligned}$$

$$\textcircled{4} \quad x^2 + 18x + 81 = 0$$

$$\begin{aligned} (x+9)^2 &= 0 \\ x &= -9 \end{aligned}$$

$$\textcircled{5} \quad x^2 - 25 = 0$$

$$\begin{aligned} (x+5)(x-5) &= 0 \\ x &= \pm 5 \end{aligned}$$

$$\textcircled{6} \quad x^2 - 9x + 20 = 0$$

$$\begin{aligned} (x-4)(x-5) &= 0 \\ x &= 4, 5 \end{aligned}$$

$$\textcircled{7} \quad x^2 - 3x - 2 = 0$$

$$\begin{aligned} x &= \frac{-(-3) \pm \sqrt{(-3)^2 - 4 \times 1 \times (-2)}}{2 \times 1} \\ &= \frac{3 \pm \sqrt{9 + 8}}{2} = \frac{3 \pm \sqrt{17}}{2} \end{aligned}$$

$$\textcircled{8} \quad 2x^2 + 5x - 1 = 0$$

$$\begin{aligned} x &= \frac{-5 \pm \sqrt{5^2 - 4 \times 2 \times (-1)}}{2 \times 2} \\ &= \frac{-5 \pm \sqrt{25 + 8}}{4} = \frac{-5 \pm \sqrt{33}}{4} \end{aligned}$$

$$\textcircled{9} \quad x^2 + 4x - 3 = 0$$

$$\begin{aligned} x &= \frac{-4 \pm \sqrt{4^2 - 4 \times 1 \times (-3)}}{2 \times 1} = \frac{-4 \pm \sqrt{16 + 12}}{2} \\ &= \frac{-4 \pm \sqrt{28}}{2} = \frac{-4 \pm 2\sqrt{7}}{2} \\ &= -2 \pm \sqrt{7} \end{aligned}$$

$$\textcircled{10} \quad 6x^2 + x - 2 = 0$$

$$\begin{aligned} x &= \frac{-1 \pm \sqrt{1^2 - 4 \times 6 \times (-2)}}{2 \times 6} = \frac{-1 \pm \sqrt{1 + 48}}{12} \\ &= \frac{-1 \pm \sqrt{49}}{12} = \frac{-1 \pm 7}{12} \\ &= \frac{6}{12}, -\frac{8}{12} \quad x = \frac{1}{2}, -\frac{2}{3} \end{aligned}$$

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