

# 二次方程式 解の公式 1

3年 組 番・氏名 \_\_\_\_\_

◆次の二次方程式を、解の公式を使って解け。

① $x^2 + 3x - 1 = 0$ $x = \frac{-3 \pm \sqrt{3^2 - 4 \times 1 \times (-1)}}{2 \times 1}$ $= \frac{-3 \pm \sqrt{9+4}}{2} = \frac{-3 \pm \sqrt{13}}{2}$	② $x^2 - 5x + 2 = 0$ $x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4 \times 1 \times 2}}{2 \times 1}$ $= \frac{5 \pm \sqrt{25-8}}{2} = \frac{5 \pm \sqrt{17}}{2}$
③ $3x^2 - x - 3 = 0$ $x = \frac{-(-1) \pm \sqrt{(-1)^2 - 4 \times 3 \times (-3)}}{2 \times 3}$ $= \frac{1 \pm \sqrt{1+36}}{6} = \frac{1 \pm \sqrt{37}}{6}$	④ $4x^2 + 5x - 1 = 0$ $x = \frac{-5 \pm \sqrt{5^2 - 4 \times 4 \times (-1)}}{2 \times 4}$ $= \frac{-5 \pm \sqrt{25+16}}{8} = \frac{-5 \pm \sqrt{41}}{8}$
⑤ $5x^2 + 7x - 2 = 0$ $x = \frac{-7 \pm \sqrt{7^2 - 4 \times 5 \times (-2)}}{2 \times 5}$ $= \frac{-7 \pm \sqrt{49+40}}{10} = \frac{-7 \pm \sqrt{89}}{10}$	⑥ $2x^2 - x - 4 = 0$ $x = \frac{-(-1) \pm \sqrt{(-1)^2 - 4 \times 2 \times (-4)}}{2 \times 2}$ $= \frac{1 \pm \sqrt{1+32}}{4} = \frac{1 \pm \sqrt{33}}{4}$
⑦ $x^2 + 5x + 3 = 0$ $x = \frac{-5 \pm \sqrt{5^2 - 4 \times 1 \times 3}}{2 \times 1}$ $= \frac{-5 \pm \sqrt{25-12}}{2} = \frac{-5 \pm \sqrt{13}}{2}$	⑧ $2x^2 - 9x + 5 = 0$ $x = \frac{-(-9) \pm \sqrt{(-9)^2 - 4 \times 2 \times 5}}{2 \times 2}$ $= \frac{9 \pm \sqrt{81-40}}{4} = \frac{9 \pm \sqrt{41}}{4}$
⑨ $2x^2 + 7x + 3 = 0$ $x = \frac{-7 \pm \sqrt{7^2 - 4 \times 2 \times 3}}{2 \times 2} = \frac{-7 \pm \sqrt{49-24}}{4}$ $= \frac{-7 \pm \sqrt{25}}{4} = \frac{-7 \pm 5}{4}$ $x = \frac{2}{4}, -\frac{12}{4} \quad x = -\frac{1}{2}, -3$	⑩ $3x^2 + 5x - 2 = 0$ $x = \frac{-5 \pm \sqrt{5^2 - 4 \times 3 \times (-2)}}{2 \times 3} = \frac{-5 \pm \sqrt{25+24}}{6}$ $= \frac{-5 \pm \sqrt{49}}{6} = \frac{-5 \pm 7}{6}$ $x = \frac{2}{6}, -\frac{12}{6} \quad x = \frac{1}{3}, -2$

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# 二次方程式 解の公式 2

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◆次の二次方程式を、解の公式を使って解け。

① $x^2 + 5x - 3 = 0$ $x = \frac{-5 \pm \sqrt{5^2 - 4 \times 1 \times (-3)}}{2 \times 1}$ $= \frac{-5 \pm \sqrt{25+12}}{2} = \frac{-5 \pm \sqrt{37}}{2}$	② $2x^2 - 3x - 1 = 0$ $x = \frac{-(-3) \pm \sqrt{(-3)^2 - 4 \times 2 \times (-1)}}{2 \times 2}$ $= \frac{3 \pm \sqrt{9+8}}{4} = \frac{3 \pm \sqrt{17}}{4}$
③ $x^2 - 5x + 3 = 0$ $x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4 \times 1 \times 3}}{2 \times 1}$ $= \frac{5 \pm \sqrt{25-12}}{2} = \frac{5 \pm \sqrt{13}}{2}$	④ $2x^2 - 9x + 6 = 0$ $x = \frac{-(-9) \pm \sqrt{(-9)^2 - 4 \times 2 \times 6}}{2 \times 2}$ $= \frac{9 \pm \sqrt{81-48}}{4} = \frac{9 \pm \sqrt{33}}{4}$
⑤ $3x^2 - 5x - 1 = 0$ $x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4 \times 3 \times (-1)}}{2 \times 3}$ $= \frac{5 \pm \sqrt{25+12}}{6} = \frac{5 \pm \sqrt{37}}{6}$	⑥ $4x^2 + 3x - 2 = 0$ $x = \frac{-3 \pm \sqrt{3^2 - 4 \times 4 \times (-2)}}{2 \times 4}$ $= \frac{-3 \pm \sqrt{9+32}}{8} = \frac{-3 \pm \sqrt{41}}{8}$
⑦ $5x^2 + 7x + 1 = 0$ $x = \frac{-7 \pm \sqrt{7^2 - 4 \times 5 \times 1}}{2 \times 5}$ $= \frac{-7 \pm \sqrt{49-20}}{10} = \frac{-7 \pm \sqrt{29}}{10}$	⑧ $x^2 + 5x + 2 = 0$ $x = \frac{-5 \pm \sqrt{5^2 - 4 \times 1 \times 2}}{2 \times 1}$ $= \frac{-5 \pm \sqrt{25-8}}{2} = \frac{-5 \pm \sqrt{17}}{2}$
⑨ $3x^2 - x - 2 = 0$ $x = \frac{-(-1) \pm \sqrt{(-1)^2 - 4 \times 3 \times (-2)}}{2 \times 3} = \frac{1 \pm \sqrt{1+24}}{6}$ $= \frac{1 \pm \sqrt{25}}{6} = \frac{1 \pm 5}{6}$ $x = \frac{6}{6}, -\frac{4}{6} \quad x = 1, -\frac{2}{3}$	⑩ $6x^2 + x - 2 = 0$ $x = \frac{-1 \pm \sqrt{1^2 - 4 \times 6 \times (-2)}}{2 \times 6} = \frac{-1 \pm \sqrt{1+48}}{12}$ $= \frac{-1 \pm \sqrt{49}}{12} = \frac{-1 \pm 7}{12}$ $x = \frac{6}{12}, -\frac{8}{12} \quad x = \frac{1}{2}, -\frac{2}{3}$

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