

/	解説
/	NO 5

中3 2次方程式 NO6
完全平方で解く②

NAME	A	B	C

Aコース

① $x^2 - 2x - 3 = 0$

$$x^2 - 2x = +3$$

$$x^2 - 2x + \left(\frac{2}{2}\right)^2 = +3 + \left(\frac{2}{2}\right)^2$$

$$x - 2x + 1^2 = +3 + 1$$

$$(x-1)^2 = +4$$

$$x-1 = \pm 2$$

$$x = 3, -1$$

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④ $x^2 - 5x + 5 = 0$

$$x^2 - 5x = -5$$

$$x^2 - 5x + \left(\frac{5}{2}\right)^2 = -5 + \left(\frac{5}{2}\right)^2$$

$$x^2 - 5x + \frac{25}{4} = \frac{5}{4} + \frac{25}{4}$$

$$\left(x - \frac{5}{2}\right)^2 = \frac{45}{4}$$

$$x - \frac{5}{2} = \pm \frac{3\sqrt{5}}{2}$$

$$x = \frac{5}{2} \pm \frac{3\sqrt{5}}{2}$$

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Bコース

② $x^2 + 4x + 7 = 0$

$$x^2 + 4x = -7$$

$$x^2 + 4x + \left(\frac{4}{2}\right)^2 = -7 + \left(\frac{4}{2}\right)^2$$

$$x^2 + 4x + 4 = -7 + 4$$

$$(x+2)^2 = -3$$

$$x+2 = \pm \sqrt{-3}$$

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

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⑤ $x^2 + x + 1 = 0$

$$x^2 + x = -1$$

$$x^2 + x + \left(\frac{1}{2}\right)^2 = -1 + \left(\frac{1}{2}\right)^2$$

$$\left(x + \frac{1}{2}\right)^2 = -\frac{3}{4}$$

$$\left(x + \frac{1}{2}\right)^2 = -\frac{3}{4}$$

$$x + \frac{1}{2} = \pm \frac{\sqrt{-3}}{2}$$

$$x = -\frac{1}{2} \pm \frac{\sqrt{-3}}{2}$$

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Cコース

③ $x^2 - 3x + 6 = 0$

$$x^2 - 3x = -6$$

$$x^2 - 3x + \left(\frac{3}{2}\right)^2 = -6 + \left(\frac{3}{2}\right)^2$$

$$x^2 - 3x + \frac{9}{4} = -6 + \frac{9}{4}$$

$$\left(x - \frac{3}{2}\right)^2 = -\frac{27}{4}$$

$$x - \frac{3}{2} = \pm \frac{\sqrt{-27}}{2}$$

$$x = \frac{3}{2} \pm \frac{\sqrt{-27}}{2}$$

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⑥ $x^2 + 9x + 2 = 0$

$$x^2 + 9x = -2$$

$$x^2 + 9x + \left(\frac{9}{2}\right)^2 = -2 + \left(\frac{9}{2}\right)^2$$

$$x^2 + 9x + \frac{81}{4} = -2 + \frac{81}{4}$$

$$\left(x + \frac{9}{2}\right)^2 = \frac{77}{4}$$

$$x + \frac{9}{2} = \pm \frac{\sqrt{77}}{2}$$

$$x = -\frac{9}{2} \pm \frac{\sqrt{77}}{2}$$

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