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● 次の２次方程式を解きなさい。

① $(x-3)(x-4)=0$

$x=3,\ x=4$

② $(x+7)(x-5)=0$

$x=-7,\ x=5$

③ $(x-1)(x+2)=0$

$x=-2,\ x=1$

④ $(x+4)(x+9)=0$

$x=-9,\ x=-4$

⑤ $x(x-6)=0$

$x=0,\ x=6$

⑥ $x(x+3)=0$

$x=-3,\ x=0$

⑦ $(x+4)^2=0$

$x=-4$

⑧ $(x-8)^2=0$

$x=8$

● 次の２次方程式を解きなさい。

① $x^2 - 5x = 0$

$x(x - 5) = 0$

$x = 0, \quad x = 5$

② $x^2 + 2x = 0$

$x(x + 2) = 0$

$x = -2, \quad x = 0$

③ $3x^2 + 9x = 0$

$3x(x + 3) = 0$

$x = -3, \quad x = 0$

④ $x^2 = 7x$

$x^2 - 7x = 0$

$x(x - 7) = 0$

$x = 0, \quad x = 7$

⑤ $x^2 - 1 = 0$

$(x + 1)(x - 1) = 0$

$x = \pm 1$

⑥ $x^2 - 64 = 0$

$(x + 8)(x - 8) = 0$

$x = \pm 8$

⑦ $x^2 - 36 = 0$

$(x + 6)(x - 6) = 0$

$x = \pm 6$

⑧ $x^2 - 81 = 0$

$(x + 9)(x - 9) = 0$

$x = \pm 9$

● 次の２次方程式を解きなさい。

① $x^2 + 5x + 4 = 0$

$(x + 4)(x + 1) = 0$

$x = -4,\ x = -1$

② $x^2 - 5x + 6 = 0$

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

$x = 2,\ x = 3$

③ $x^2 - 4x - 21 = 0$

$(x + 3)(x - 7) = 0$

$x = -3,\ x = 7$

④ $x^2 + x - 30 = 0$

$(x + 6)(x - 5) = 0$

$x = -6,\ x = 5$

⑤ $x^2 + 3x = 10$

$x^2 + 3x - 10 = 0$

$(x + 5)(x - 2) = 0$

$x = -5,\ x = 2$

⑥ $x^2 - 4x = 32$

$x^2 - 4x - 32 = 0$

$(x + 4)(x - 8) = 0$

$x = -4,\ x = 8$

⑦ $x^2 = 3x + 54$

$x^2 - 3x - 54 = 0$

$(x + 6)(x - 9) = 0$

$x = -6,\ x = 9$

⑧ $x^2 = 11x - 28$

$x^2 - 11x + 28 = 0$

$(x - 4)(x - 7) = 0$

$x = 4,\ x = 7$

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● 次の２次方程式を解きなさい。

① $x^2 + 6x + 9 = 0$

　$(x + 3)^2 = 0$

　　$x = -3$

② $x^2 + 8x + 16 = 0$

　$(x + 4)^2 = 0$

　　$x = -4$

③ $x^2 - 12x + 36 = 0$

　$(x - 6)^2 = 0$

　　$x = 6$

④ $x^2 - 2x + 1 = 0$

　$(x - 1)^2 = 0$

　　$x = 1$

⑤ $x^2 + 14x = -49$

$x^2 + 14x + 49 = 0$

　$(x + 7)^2 = 0$

　　$x = -7$

⑥ $x^2 - 10x = -25$

$x^2 - 10x + 25 = 0$

　$(x - 5)^2 = 0$

　　$x = 5$

⑦ $x^2 = -4x - 4$

　$x^2 + 4x + 4 = 0$

　　$(x + 2)^2 = 0$

　　　$x = -2$

⑧ $x^2 = 18x - 81$

　$x^2 - 18x + 81 = 0$

　　$(x - 9)^2 = 0$

　　　$x = 9$

● 次の２次方程式を解きなさい。

① $x^2 = 7$

$x = \pm\sqrt{7}$

② $4x^2 = 11$

$x^2 = \dfrac{11}{4}$

$x = \pm\dfrac{\sqrt{11}}{2}$

③ $x^2 - 8 = 0$

$x^2 = 8$

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

④ $3x^2 - 15 = 0$

$x^2 = 5$

$x = \pm\sqrt{5}$

⑤ $(x-4)^2 = 6$

$x - 4 = \pm\sqrt{6}$

$x = 4 \pm\sqrt{6}$

⑥ $(x+1)^2 = 5$

$x + 1 = \pm\sqrt{5}$

$x = -1 \pm\sqrt{5}$

⑦ $(x+2)^2 = 4$

$x + 2 = \pm 2$

$x = -4, \quad x = 0$

⑧ $(x-3)^2 = 12$

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

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

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● 次の２次方程式を解きなさい。

① $3x^2 + 9x + 4 = 0$

$$x = \frac{-9 \pm \sqrt{9^2 - 4 \times 3 \times 4}}{2 \times 3}$$

$$x = \frac{-9 \pm \sqrt{33}}{6}$$

② $x^2 + 7x - 5 = 0$

$$x = \frac{-7 \pm \sqrt{7^2 - 4 \times 1 \times (-5)}}{2 \times 1}$$

$$x = \frac{-7 \pm \sqrt{69}}{2}$$

③ $2x^2 - 5x - 3 = 0$

$$x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4 \times 2 \times (-3)}}{2 \times 2}$$

$$x = 3, \quad x = -\frac{1}{2}$$

④ $9x^2 + 3x - 2 = 0$

$$x = \frac{-3 \pm \sqrt{3^2 - 4 \times 9 \times (-2)}}{2 \times 9}$$

$$x = \frac{1}{3}, \quad x = -\frac{2}{3}$$

⑤ $x^2 - 2x - 10 = 0$

$$x = \frac{-(-2) \pm \sqrt{(-2)^2 - 4 \times 1 \times (-10)}}{2 \times 1}$$

$$x = 1 \pm \sqrt{11}$$

⑥ $4x^2 - 8x + 1 = 0$

$$x = \frac{-(-8) \pm \sqrt{(-8)^2 - 4 \times 4 \times 1}}{2 \times 4}$$

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

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● 次の2次方程式を解きなさい。

① $x^2 - x = 10$

$x^2 - x - 10 = 0$

$x = \dfrac{-(-1) \pm \sqrt{(-1)^2 - 4 \times 1 \times (-10)}}{2 \times 1}$

$x = \dfrac{1 \pm \sqrt{41}}{2}$

② $x(x+1) = 2$

$x^2 + x = 2$

$x^2 + x - 2 = 0$

$(x+2)(x-1) = 0$

$x = -2, \quad x = 1$

③ $10x^2 + 8x - 8 = 0$

$5x^2 + 4x - 4 = 0$

$x = \dfrac{-4 \pm \sqrt{4^2 - 4 \times 5 \times (-4)}}{2 \times 5}$

$x = \dfrac{-2 \pm 2\sqrt{6}}{5}$

④ $(x+1)^2 + 4x = 0$

$x^2 + 2x + 1 + 4x = 0$

$x^2 + 6x + 1 = 0$

$x = \dfrac{-6 \pm \sqrt{6^2 - 4 \times 1 \times 1}}{2 \times 1}$

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

⑤ $(x-1)^2 - 25 = 2x + 8$

$x^2 - 2x + 1 - 25 = 2x + 8$

$x^2 - 4x - 32 = 0$

$(x+4)(x-8) = 0$

$x = -4, \quad x = 8$

⑥ $6x + (x+3)(x-3) = -18$

$6x + x^2 - 9 = -18$

$x^2 + 6x + 9 = 0$

$(x+3)^2 = 0$

$x = -3$