

得 点		演習問題 二次方程式 ③	実 施 日	月 日	氏 名	
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【1】因数分解によって、次の方程式を解きなさい。

① $x^2 + 3x = 0$

② $3x^2 + 12x = 0$

③ $x^2 + 6x + 8 = 0$

④ $x^2 - 9x + 20 = 0$

⑤ $x^2 - 2x - 3 = 0$

⑥ $x^2 - 2x - 8 = 0$

⑦ $x^2 + x - 30 = 0$

⑧ $x^2 - 3x - 28 = 0$

⑨ $x^2 + x - 12 = 0$

⑩ $x^2 - 10x - 200 = 0$

⑪ $x^2 - 36 = 0$

⑫ $x^2 - 25 = 0$

⑬ $4x^2 - 9 = 0$

⑭ $x^2 + 16x + 64 = 0$

⑮ $x^2 - 22x + 121 = 0$

⑯ $4x^2 - 12x + 9 = 0$

⑰ $9x^2 - 30x + 25 = 0$

⑱ $25x^2 + 10x + 1 = 0$

【3】次の方程式を解きなさい。

① $x^2 - 3 = 7x - 9$

② $x^2 - 4x = -16x - 27$

③ $(x - 2)(x + 4) = 7$

④ $(x + 1)(x + 7) = -5$

⑤ $\frac{x^2}{12} + \frac{x}{3} + \frac{1}{4} = 0$

⑥ $(x - 3)(x - 7) + 8 = 4$

⑦ $x + 40 = (x - 2)^2$

⑧ $(x - 3)^2 = 2(x - 1) - 1$

⑨ $(2x - 1)^2 = 2x(x + 2) + 25$

⑩ $2(x^2 - 20) = (x + 2)(x - 10)$

得点	演習問題【解答】	実施日	月 日	氏名
	二次方程式 ③			

【1】因数分解によって、次の方程式を解きなさい。

① $x^2 + 3x = 0$

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

② $3x^2 + 12x = 0$

$$\begin{aligned}3x(x+4) &= 0 \\x = 0, x &= -4\end{aligned}$$

③ $x^2 + 6x + 8 = 0$

④ $x^2 - 9x + 20 = 0$

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

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

⑤ $x^2 - 2x - 3 = 0$

⑥ $x^2 - 2x - 8 = 0$

$$\begin{aligned}(x-3)(x+1) &= 0 \\x = 3, x &= -1\end{aligned}$$

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

⑦ $x^2 + x - 30 = 0$

⑧ $x^2 - 3x - 28 = 0$

$$\begin{aligned}(x+6)(x-5) &= 0 \\x = 5, x &= -6\end{aligned}$$

$$\begin{aligned}(x+4)(x-7) &= 0 \\x = 7, x &= -4\end{aligned}$$

⑨ $x^2 + x - 12 = 0$

⑩ $x^2 - 10x - 200 = 0$

$$\begin{aligned}(x+4)(x-3) &= 0 \\x = 3, x &= -4\end{aligned}$$

$$\begin{aligned}(x-20)(x+10) &= 0 \\x = 20, x &= -10\end{aligned}$$

⑪ $x^2 - 36 = 0$

⑫ $x^2 - 25 = 0$

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

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

⑬ $4x^2 - 9 = 0$

⑭ $x^2 + 16x + 64 = 0$

$$\begin{aligned}(2x+3)(2x-3) &= 0 \\x = \pm \frac{3}{2}\end{aligned}$$

$$\begin{aligned}(x+8)^2 &= 0 \\x &= -8\end{aligned}$$

⑮ $x^2 - 22x + 121 = 0$

⑯ $4x^2 - 12x + 9 = 0$

$$\begin{aligned}(x-11)^2 &= 0 \\x &= 11\end{aligned}$$

$$\begin{aligned}(2x-3)^2 &= 0 \\2x-3 &= 0\end{aligned}$$

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

⑰ $9x^2 - 30x + 25 = 0$

⑱ $25x^2 + 10x + 1 = 0$

$$\begin{aligned}(3x-5)^2 &= 0 \\x = \frac{5}{3}\end{aligned}$$

$$\begin{aligned}(5x+1)^2 &= 0 \\5x+1 &= 0\end{aligned}$$

$$x = -\frac{1}{5}$$

【2】次の方程式を解きなさい。

① $x^2 - 3 = 7x - 9$

$$\begin{aligned}x^2 - 7x + 6 &= 0 \\(x-1)(x-6) &= 0 \\x = 1, x &= 6\end{aligned}$$

② $x^2 - 4x = -16x - 27$

$$\begin{aligned}x^2 + 12x + 27 &= 0 \\(x+3)(x+9) &= 0 \\x = -3, x &= -9\end{aligned}$$

③ $(x-2)(x+4) = 7$

$$\begin{aligned}x^2 + 2x - 8 &= 7 \\x^2 + 2x - 15 &= 0 \\(x+5)(x-3) &= 0 \\x = 3, x &= -5\end{aligned}$$

④ $(x+1)(x+7) = -5$

$$\begin{aligned}x^2 + 8x + 7 &= -5 \\x^2 + 8x + 12 &= 0 \\(x+2)(x+6) &= 0 \\x = -2, x &= -6\end{aligned}$$

⑤ $\frac{x^2}{12} + \frac{x}{3} + \frac{1}{4} = 0$

$$\begin{aligned}x^2 + 4x + 3 &= 0 \\(x+1)(x+3) &= 0 \\x = -1, x &= -3\end{aligned}$$

⑥ $(x-3)(x-7) + 8 = 4$

$$\begin{aligned}x^2 - 10x + 21 + 8 &= 4 \\x^2 - 10x + 25 &= 0 \\(x-5)^2 &= 0 \\x &= 5\end{aligned}$$

⑦ $x + 40 = (x-2)^2$

$$\begin{aligned}x + 40 &= x^2 - 4x + 4 \\x^2 - 5x - 36 &= 0 \\(x-9)(x+4) &= 0 \\x = 9, x &= -4\end{aligned}$$

⑧ $(x-3)^2 = 2(x-1) - 1$

$$\begin{aligned}x^2 - 6x + 9 &= 2x - 3 \\x^2 - 8x + 12 &= 0 \\(x-2)(x-6) &= 0 \\x = 2, x &= 6\end{aligned}$$

⑨ $(2x-1)^2 = 2x(x+2) + 25$

$$\begin{aligned}4x^2 - 4x + 1 &= 2x^2 + 4x + 25 \\2x^2 - 8x - 24 &= 0 \\x^2 - 4x - 12 &= 0 \\(x-6)(x+2) &= 0 \\x = 6, x &= -2\end{aligned}$$

⑩ $2(x^2 - 20) = (x+2)(x-10)$

$$\begin{aligned}2x^2 - 40 &= x^2 - 8x - 20 \\x^2 + 8x - 20 &= 0 \\(x+10)(x-2) &= 0 \\x = 2, x &= -10\end{aligned}$$