

1 次の2次方程式を解け。

- (1) $x(x-5)=0$ (2) $x^2+2x-8=0$ (3) $x^2+6x+9=0$
 (4) $x^2-9x+14=0$ (5) $2x^2+x=0$ (6) $2x^2+5x+2=0$
 (7) $3x^2-7x-6=0$ (8) $6x^2+x-12=0$ (9) $4x^2-4x+1=0$

(1) $x(x-5)=0$ (2) $(x+6)(x-2)=0$ (3) $(x+3)^2=0$

$x=0, 5$

$x=2, -6$

$x=-3$

(4) $(x-7)(x-2)=0$ (5) $x(2x+1)=0$ (6) $(2x+1)(x+2)=0$

$x=2, 7$

$x=0, -\frac{1}{2}$

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

(7) $(3x+2)(x-3)=0$ (8) $(2x+3)(3x-4)=0$ (9) $(2x-1)^2=0$

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

$x=-\frac{3}{2}, \frac{4}{3}$

$x=\frac{1}{2}$

2 次の2次方程式を解け。

- (1) $x^2+x-3=0$ (2) $2x^2-5x+1=0$ (3) $x^2-4x-1=0$
 (4) $4x^2+12x+7=0$ (5) $3x^2-9x+5=0$ (6) $8x^2+2x-1=0$
 (7) $x^2-\sqrt{6}x-1=0$ (8) $x^2+2\sqrt{7}x+5=0$

(1) $x = \frac{-1 \pm \sqrt{1+12}}{2}$

$x = \frac{-1 \pm \sqrt{13}}{2}$

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

$x = \frac{5 \pm \sqrt{17}}{4}$

(3) $x = \frac{2 \pm \sqrt{4+1}}{1}$

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

(4) $x = \frac{-6 \pm \sqrt{36-28}}{4}$

$x = \frac{-6 \pm \sqrt{8}}{4}, x = \frac{-3 \pm \sqrt{2}}{2}$

(5) $x = \frac{9 \pm \sqrt{81-60}}{6}$

$x = \frac{9 \pm \sqrt{21}}{6}$

(6) $x = \frac{-1 \pm \sqrt{1+8}}{8}$

$= \frac{-1 \pm 3}{8}, x = \frac{2}{8}, -\frac{4}{8}$

$x = \frac{1}{4}, -\frac{1}{2}$

(6) $(2x+1)(4x-1)=0$

$x = -\frac{1}{2}, \frac{1}{4}$

(7) $x = \frac{\sqrt{6} \pm \sqrt{6+4}}{2}$

$x = \frac{\sqrt{6} \pm \sqrt{10}}{2}$

(8) $x = \frac{-\sqrt{7} \pm \sqrt{7-5}}{1}$

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

(6)のように因数分解できそうな問題は、裏付けのようにした!!

3 次の2次方程式を解け。

(1) $x^2 - 4x - 2 = 0$

(3) $4x^2 + 11x - 3 = 0$

(5) $x^2 - \frac{7}{6}x - \frac{1}{2} = 0$

(7) $(x+6)(x-1) = x(7-3x)$

(9) $1.5x(2-0.5x) = 0.5x+2$

(1) $x = \frac{2 \pm \sqrt{4+2}}{1}$

$x = 2 \pm \sqrt{6}$

(3) $(4x-1)(x+3) = 0$

$x = \frac{1}{4}, -3$

(5) $6x^2 - 7x - 3 = 0$

$(3x+1)(2x-3) = 0$

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

(2) $2x^2 - 10x + 1 = 0$

(4) $-2x^2 + 4x + 3 = 0$

(6) $20x - 25 - 4x^2 = 0$

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

(10) $x^2 - 5\sqrt{3}x + 18 = 0$

(2) $x = \frac{5 \pm \sqrt{25-2}}{2}$

$x = \frac{5 \pm \sqrt{23}}{2}$

(4) $2x^2 - 4x - 3 = 0$

$x = \frac{2 \pm \sqrt{4+6}}{2}$

$x = \frac{2 \pm \sqrt{10}}{2}$

(6) $20x - 25 - 4x^2 = 0$
 $4x^2 - 20x + 25 = 0$

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

$x = \frac{5}{2}$

(7) $x^2 + 5x - 6 = 7x - 3x^2$ (8) $x^2 + 4x + 4 - 5x - 10 + 5 = 0$

$4x^2 - 2x - 6 = 0$

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

$(2x-3)(x+1) = 0$

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

$x^2 - x - 1 = 0$

$x = \frac{1 \pm \sqrt{1+4}}{2}$

$x = \frac{1 \pm \sqrt{5}}{2}$

(9) $1.5x(2-0.5x) = 0.5x+2$
 $(\times 4)$

$3x(4-x) = 2x+8$

$12x - 3x^2 = 2x+8$

$3x^2 - 10x + 8 = 0$

$(3x-4)(x-2) = 0$

$x = 2, \frac{4}{3}$

<今日のふりかえり>

(10) $x = \frac{5\sqrt{3} \pm \sqrt{75-72}}{2}$

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

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

(8) $\langle +x \rangle$

$A = x+2$

$A^2 - 5A + 5 = 0$

$A = \frac{5 \pm \sqrt{25-20}}{2}$

$A = \frac{5 \pm \sqrt{5}}{2}$

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

$x = \frac{1 \pm \sqrt{5}}{2}$

- ① 因数分解
- ② 解の公式

基本的には、因数分解をしよう。
 “2秒” 悩んだら、計算と覚悟して、
 解の公式をがんばる!!!