

氏名 \_\_\_\_\_

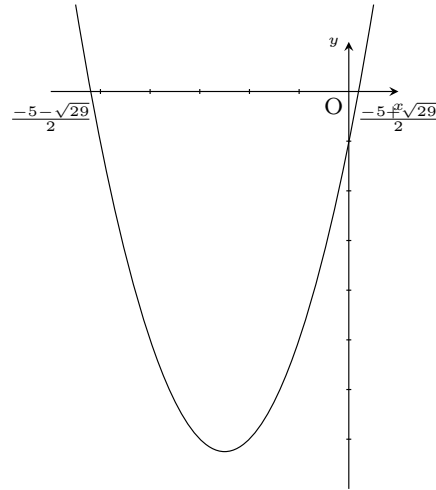
■ 2次不等式

例題  $x^2 + 5x - 1 > 0$  を解いてみよう。

解  $x^2 + 5x - 1$  は因数分解出来ないので、  
解の公式  $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$  を使う。

$x^2 + 5x - 1 = 0$  を解の公式で解くと  
 $a = 1, b = 5, c = -1$  だから

$$\begin{aligned} x &= \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \\ &= \frac{-5 \pm \sqrt{5^2 - 4 \times 1 \times (-1)}}{2 \times 1} \\ &= \frac{-5 \pm \sqrt{25 + 4}}{2} \\ &= \frac{-5 \pm \sqrt{29}}{2} \end{aligned}$$



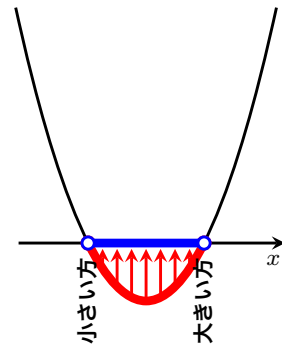
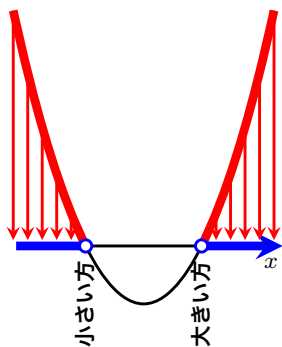
よってグラフは右ようになるので、

〈答〉  $x < \frac{-5 - \sqrt{29}}{2}, \frac{-5 + \sqrt{29}}{2} < x$

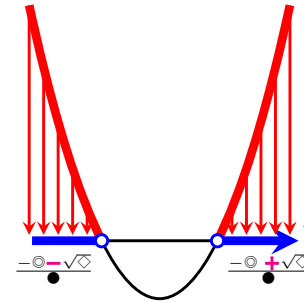
■ 因数分解出来る場合 (ただし  $a > 0$ )

$$\begin{aligned} &ax^2 + bx + c > 0 \\ &\downarrow \\ &x < \begin{matrix} \text{小さい方} & \text{大きい方} \\ \text{の答え} & \text{の答え} \end{matrix} < x \end{aligned}$$

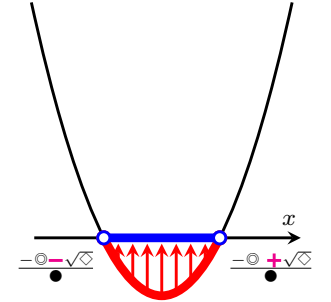
$$\begin{aligned} &ax^2 + bx + c < 0 \\ &\downarrow \\ &\begin{matrix} \text{小さい方} & \text{大きい方} \\ \text{の答え} & \text{の答え} \end{matrix} < x < \begin{matrix} \text{大きい方} & \text{小さい方} \\ \text{の答え} & \text{の答え} \end{matrix} \end{aligned}$$



$$\begin{aligned} &ax^2 + bx + c > 0 \\ &\downarrow \\ &x < \frac{-\ominus - \sqrt{\diamond}}{\bullet}, \frac{-\ominus + \sqrt{\diamond}}{\bullet} < x \end{aligned}$$



$$\begin{aligned} &ax^2 + bx + c < 0 \\ &\downarrow \\ &\frac{-\ominus - \sqrt{\diamond}}{\bullet} < x < \frac{-\ominus + \sqrt{\diamond}}{\bullet} \end{aligned}$$



1 次の2次不等式を解きなさい。

(1)  $x^2 + 3x + 1 > 0$

(2)  $x^2 - x - 3 < 0$

(3)  $2x^2 + x - 3 \leq 0$

(4)  $2x^2 - x - 2 \geq 0$

(5)  $2x^2 - 7x + 6 < 0$

(6)  $3x^2 + 5x + 2 \geq 0$

$$(7) \quad 3x^2 + 5x - 3 \leq 0$$

$$(8) \quad 6x^2 - 5x - 4 \geq 0$$

$$(11) \quad x^2 + 3x - 5 > 0$$

$$(12) \quad 6x^2 - x - 15 < 0$$

$$(9) \quad 2x^2 + 3x + 1 \leq 0$$

$$(10) \quad x^2 + 7x - 2 \leq 0$$

$$(13) \quad 6x^2 + 5x + 1 < 0$$

$$(14) \quad 3x^2 - x - 3 \geq 0$$