

# ベクトルが等しいとは

$$\vec{a} = (\star, \blacktriangle) \text{ と}$$

$$\vec{b} = (\bullet, \blacksquare) \text{ が等しいときは}$$

$$\star = \bullet, \quad \blacktriangle = \blacksquare \quad \text{です (当然だ)}$$

$\vec{a} = (x - 5, y + 9)$ ,  $\vec{b} = (-3, 1)$ ,  $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$\vec{a} = (x-5, y+9)$ ,  $\vec{b} = (-3, 1)$ ,  $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$x - 5 = -3$$

$\vec{a} = (x-5, y+9)$ ,  $\vec{b} = (-3, 1)$ ,  $\vec{a} = \vec{b}$  のとき  $x, y$ ?

$$x - 5 = -3$$

$$x = -3 + 5$$

$$x = 2 \quad \text{答}$$

$\vec{a} = (x-5, y+9)$ ,  $\vec{b} = (-3, 1)$ ,  $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$x - 5 = -3$$

$$y + 9 = 1$$

$$x = -3 + 5$$

$$x = 2 \quad \text{答}$$

$\vec{a} = (x-5, y+9)$ ,  $\vec{b} = (-3, 1)$ ,  $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$x - 5 = -3$$

$$y + 9 = 1$$

$$x = -3 + 5$$

$$y = 1 - 9$$

$$x = 2 \quad \text{答}$$

$$y = -8 \quad \text{答}$$

まとめると  $\boxed{\text{答}} \quad x = 2, y = -8$

$\vec{a} = (2x + 3y, 3x - 4y), \vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$\begin{cases} 2x + 3y = 1 \\ 3x - 4y = 10 \end{cases}$$



$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$\begin{cases} 2x + 3y = 1 \\ 3x - 4y = 10 \end{cases}$$

$x$  を消去する場合は 2 と 3 の  
最小公倍数 6 に揃えるために

$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$3 \times (2x + 3y) = 1 \quad \times 3$$

$$2 \times (3x - 4y) = 10 \quad \times 2$$

互いの式に **3** と **2** をかけ算する。

$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$3 \times (2x + 3y) = 1 \quad \times 3 \quad 6x + 9y = 3$$

$$2 \times (3x - 4y) = 10 \quad \times 2 \quad 6x - 8y = 20$$

互いの式に **3** と **2** をかけ算する。

$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$\begin{cases} 2x + 3y = 1 & 6x + 9y = 3 \\ 3x - 4y = 10 & 6x - 8y = 20 \end{cases}$$

式をひき算すると  $x$  が消えるので

$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$\begin{cases} 2x + 3y = 1 & 6x + 9y = 3 \\ 3x - 4y = 10 & -) 6x - 8y = 20 \end{cases}$$

---

式をひき算すると  $x$  が消えるので

$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$\begin{cases} 2x + 3y = 1 \\ 3x - 4y = 10 \end{cases} \quad \begin{array}{r} 6x + 9y = 3 \\ -) \quad 6x + 8y = -20 \\ \hline \end{array}$$

$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$\begin{cases} 2x + 3y = 1 \\ 3x - 4y = 10 \end{cases}$$

$$\begin{array}{r} 6x + 9y = 3 \\ -) 6x + 8y = -20 \\ \hline \end{array}$$

$$17y = -17$$

$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$\begin{cases} 2x + 3y = 1 \\ 3x - 4y = 10 \end{cases}$$

$$\begin{array}{r} 6x + 9y = 3 \\ -) 6x + 8y = -20 \\ \hline \end{array}$$

$$17y = -17$$

$$y = -1 \text{ (答)}$$



$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$\begin{cases} 2x + 3y = 1 \\ 3x - 4y = 10 \end{cases}$$

$$\begin{array}{r} 6x + 9y = 3 \\ -) 6x + 8y = -20 \\ \hline \end{array}$$

$$17y = -17$$

$$y = -1 \text{ (答)}$$

$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$\begin{cases} 2x + 3y = 1 \\ 3x - 4y = 10 \end{cases}$$

$$\begin{array}{r} 6x + 9y = 3 \\ -) 6x + 8y = -20 \\ \hline \end{array}$$

$$17y = -17$$

でも OK

$$y = -1 \text{ (答)}$$

$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$\begin{cases} 2x + 3y = 1 \\ 3x - 4y = 10 \end{cases}$$

$$2x + 3 \times (-1) = 1$$

$$6x + 9y = 3$$

$$- ) \quad 6x + 8y = -20$$

---

$$17y = -17$$

$$y = -1 \text{ (答)}$$

$\vec{a} = (2x + 3y, 3x - 4y), \vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$\begin{cases} 2x + 3y = 1 \\ 3x - 4y = 10 \end{cases}$$

$$\begin{array}{r} 6x + 9y = 3 \\ -) 6x + 8y = -20 \\ \hline \end{array}$$

$$\begin{array}{r} 2x + 3 \times (-1) = 1 \\ 2x \quad -3 \quad = 1 \end{array}$$

$$17y = -17$$

$$y = -1 \text{ (答)}$$

$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$\begin{cases} 2x + 3y = 1 \\ 3x - 4y = 10 \end{cases}$$

$$\begin{array}{r} 6x + 9y = 3 \\ -) 6x + 8y = -20 \\ \hline \end{array}$$

$$2x + 3 \times (-1) = 1$$

$$2x - 3 = 1$$

$$2x = 1 + 3$$

$$17y = -17$$

$$y = -1 \text{ (答)}$$

$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$\begin{cases} 2x + 3y = 1 \\ 3x - 4y = 10 \end{cases}$$

$$\begin{array}{r} 6x + 9y = 3 \\ -) 6x + 8y = -20 \\ \hline \end{array}$$

$$2x + 3 \times (-1) = 1$$

$$2x - 3 = 1$$

$$2x = 1 + 3$$

$$2x = 4$$

$$17y = -17$$

$$y = -1 \text{ (答)}$$

$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$\begin{cases} 2x + 3y = 1 \\ 3x - 4y = 10 \end{cases}$$

$$\begin{array}{r} 6x + 9y = 3 \\ -) 6x + 8y = -20 \\ \hline \end{array}$$

$$2x + 3 \times (-1) = 1$$

$$2x - 3 = 1$$

$$2x = 1 + 3$$

$$2x = 4$$

$$x = 2$$

$$17y = -17$$

$$y = -1 \text{ (答)}$$

$\vec{a} = (2x + 3y, 3x - 4y)$ ,  $\vec{b} = (1, 10)$   $\vec{a} = \vec{b}$  のとき  $x, y$  ?

$$\begin{cases} 2x + 3y = 1 \\ 3x - 4y = 10 \end{cases}$$

$$\begin{array}{r} 6x + 9y = 3 \\ -) 6x + 8y = -20 \\ \hline \end{array}$$

$$2x + 3 \times (-1) = 1$$

$$17y = -17$$

$$2x - 3 = 1$$

$$y = -1 \text{ (答)}$$

$$2x = 1 + 3$$

$$2x = 4$$

$$\text{答 } x = 2, y = -1$$

$$x = 2$$