

氏名 \_\_\_\_\_

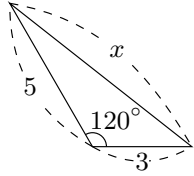
■ 余弦定理 (余弦とは  $\cos$  のことです)

余弦定理を使うと『二辺とその間の角度』が分かったときの『向かい側の辺の長さ』を計算することが出来る。

$$\left( \begin{array}{l} \text{角度の向かい} \\ \text{側の辺の長さ} \end{array} \right)^2 = \text{辺}^2 + \text{辺}^2 - 2 \times \text{辺} \times \text{辺} \times \cos(\text{間の角度})$$

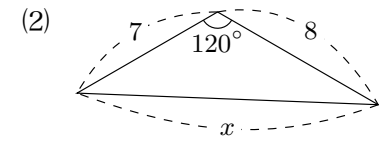
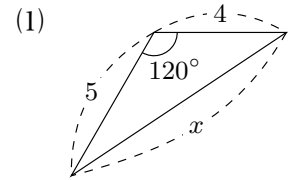
例題 右の三角形で、 $x$  の長さを求めなさい。

解 余弦定理より

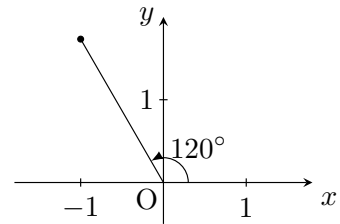


$$\begin{aligned} x^2 &= 3^2 + 5^2 - 2 \times 3 \times 5 \times \cos 120^\circ \\ x^2 &= 9 + 25 - 2 \times 3 \times 5 \times \frac{-1}{2} \\ x^2 &= 9 + 25 + 15 \\ x^2 &= 49 \\ x > 0 \text{ だから } x &= \sqrt{49} \\ x &= 7 \end{aligned}$$

1 次の三角形の辺の長さ  $x$  を求めなさい。

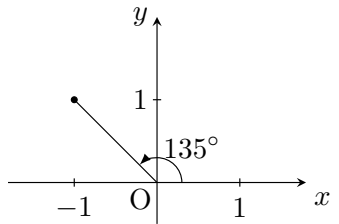


■ 120° の三角比



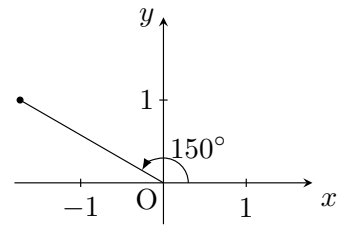
$$\begin{aligned} \sin 120^\circ &= \square \\ \cos 120^\circ &= \square \\ \tan 120^\circ &= \square \end{aligned}$$

■ 135° の三角比

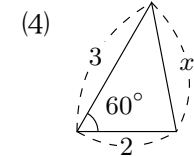
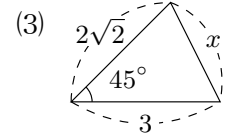


$$\begin{aligned} \sin 135^\circ &= \square \\ \cos 135^\circ &= \square \\ \tan 135^\circ &= \square \end{aligned}$$

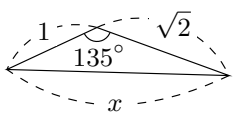
■ 150° の三角比



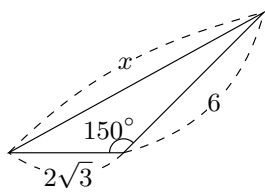
$$\begin{aligned} \sin 150^\circ &= \square \\ \cos 150^\circ &= \square \\ \tan 150^\circ &= \square \end{aligned}$$



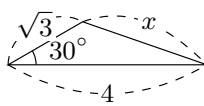
(5)



(6)



(7)



(8)

