

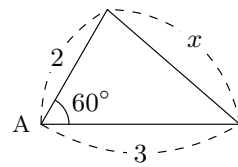
氏名 _____

■ 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

$$x^2 = 2^2 + 3^2 - 2 \times 2 \times 3 \times \cos 60^\circ$$

$$x^2 = 4 + 9 - 2 \times 2 \times 3 \times \frac{1}{2}$$

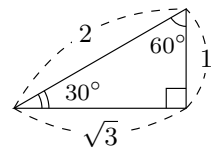
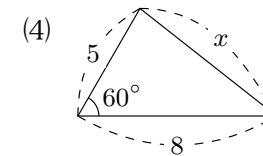
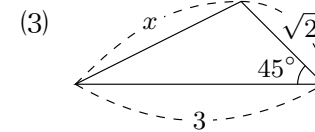
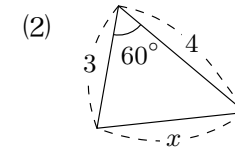
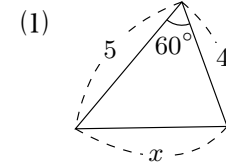
$$x^2 = 4 + 9 - 6$$

$$x^2 = 7$$

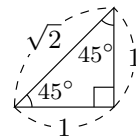
$$x = \pm\sqrt{7}$$

$x > 0$ だから $x = \sqrt{7}$

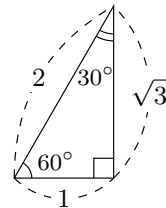
1 次の三角形の辺の長さ x を求めなさい。



$\cos 30^\circ =$

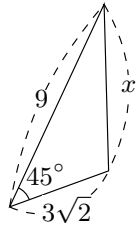


$\cos 45^\circ =$

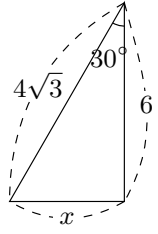


$\cos 60^\circ =$

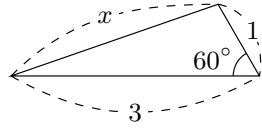
(7)



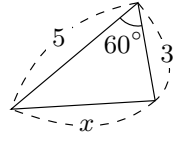
(5)



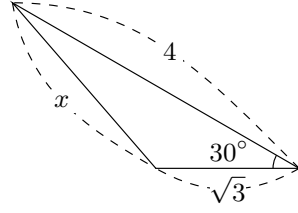
(8)



(6)



(9)



(10)

