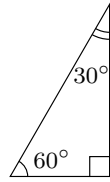
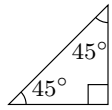
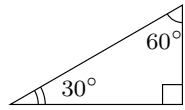


氏名 \_\_\_\_\_

(復習) 次の直角三角形を用いて,  $30^\circ, 45^\circ, 60^\circ, 120^\circ, 135^\circ, 150^\circ$  の  $\sin, \cos, \tan$  の値を求めなさい。



$$\sin 30^\circ = \square$$

$$\cos 30^\circ = \square$$

$$\tan 30^\circ = \square$$

$$\sin 45^\circ = \square$$

$$\cos 45^\circ = \square$$

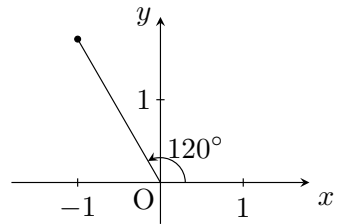
$$\tan 45^\circ = \square$$

$$\sin 60^\circ = \square$$

$$\cos 60^\circ = \square$$

$$\tan 60^\circ = \square$$

■  $120^\circ$  の三角比

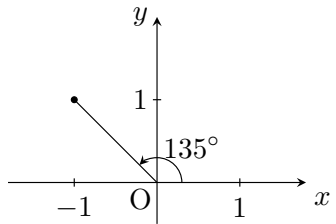


$$\sin 120^\circ = \square$$

$$\cos 120^\circ = \square$$

$$\tan 120^\circ = \square$$

■  $135^\circ$  の三角比

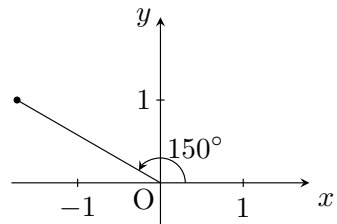


$$\sin 135^\circ = \square$$

$$\cos 135^\circ = \square$$

$$\tan 135^\circ = \square$$

■  $150^\circ$  の三角比



$$\sin 150^\circ = \square$$

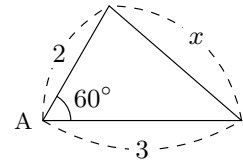
$$\cos 150^\circ = \square$$

$$\tan 150^\circ = \square$$

■ 余弦定理 (余弦とは  $\cos$  のことです)

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

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

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

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

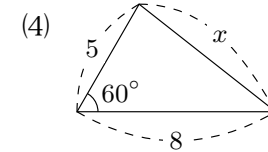
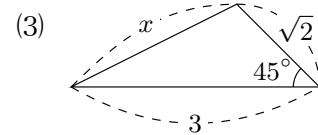
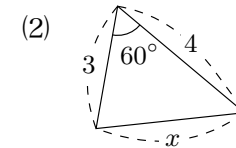
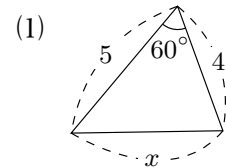
$$x^2 = 13 - 6$$

$$x^2 = 7$$

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

$x > 0$  だから  $x = \sqrt{7}$

1 次の三角形の辺の長さ  $x$  を求めなさい。



$\sin 30^\circ = \frac{1}{2}$ ,  $\sin 45^\circ = \frac{\sqrt{2}}{2}$ ,  $\sin 60^\circ = \frac{\sqrt{3}}{2}$ ,  $\cos 30^\circ = \frac{\sqrt{3}}{2}$ ,  $\cos 45^\circ = \frac{\sqrt{2}}{2}$ ,  $\cos 60^\circ = \frac{1}{2}$ ,  $\tan 30^\circ = \frac{1}{\sqrt{3}}$ ,  $\tan 45^\circ = 1$ ,  $\tan 60^\circ = \sqrt{3}$ ,  $\sin 120^\circ = \frac{\sqrt{3}}{2}$ ,  $\cos 120^\circ = -\frac{1}{2}$ ,  $\tan 120^\circ = -\sqrt{3}$   
 $\sin 135^\circ = \frac{\sqrt{2}}{2}$ ,  $\cos 135^\circ = -\frac{\sqrt{2}}{2}$ ,  $\tan 135^\circ = -1$ ,  $\sin 150^\circ = \frac{1}{2}$ ,  $\cos 150^\circ = -\frac{\sqrt{3}}{2}$ ,  $\tan 150^\circ = -\frac{1}{\sqrt{3}}$

2 次の三角形の辺の長さ  $x$  を求めなさい。

