数学Ⅰ　授業プリント ＃ 55

年　　組　　号

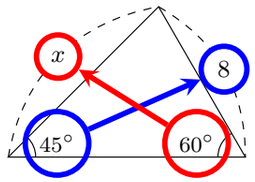
氏名

■　正弦定理（正弦（せいげん）とは sin のことです）

三角比を使うと『１辺と２つの角度』がわかったときの，三角形の辺の長さを求めることが出来る。

$$\frac{\text{角度の向かい側にある辺の長さ}}{\sin\text{角度}} = \frac{\text{角度の向かい側にある辺の長さ}}{\sin\text{角度}}$$

例題　右の三角形で，x の長さを求めなさい。



解　正弦定理より $\dfrac{x}{\sin 60^\circ} = \dfrac{8}{\sin 45^\circ}$ となる。

よって

$$\sin 60^\circ \times \frac{x}{\sin 60^\circ} = \frac{8}{\sin 45^\circ} \times \sin 60^\circ$$

$$x = \frac{8}{\sin 45^\circ} \times \sin 60^\circ$$

$$= 8 \div \sin 45^\circ \times \sin 60^\circ$$

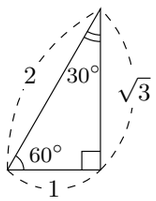
$$= 8 \div \frac{1}{\sqrt{2}} \times \frac{\sqrt{3}}{2}$$

$$= 8 \times \frac{\sqrt{2}}{1} \times \frac{\sqrt{3}}{2}$$

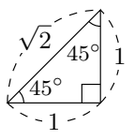
$$= \overset{4}{\cancel{8}} \times \frac{\sqrt{2}}{1} \times \frac{\sqrt{3}}{\underset{1}{\cancel{2}}}$$

$$= 4 \times \sqrt{2} \times \sqrt{3}$$

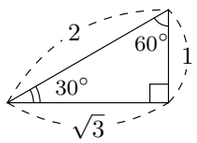
$$= 4\sqrt{6}$$ 答



$\sin 60^\circ =$ □



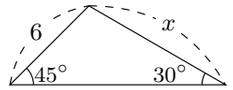
$\sin 45^\circ =$ □



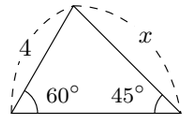
$\sin 30^\circ =$ □

1 次の三角形の辺の長さ x を求めなさい。

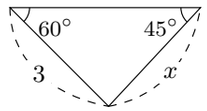
(1)



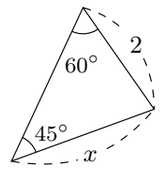
(2)



(3)



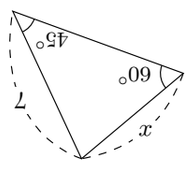
(4)



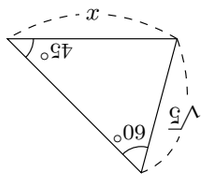
数学プリント＃55 1 (5) $\dfrac{7\sqrt{6}}{3}$ (6) $\dfrac{\sqrt{30}}{2}$ (7) $\sqrt{3}$ (8) $2\sqrt{5}$

数学プリント#55 $\sin 30^\circ = \dfrac{1}{2}$, $\sin 45^\circ = \dfrac{1}{\sqrt{2}}$, $\sin 60^\circ = \dfrac{\sqrt{3}}{2}$ $\boxed{1}$ (1) $6\sqrt{2}$ (2) $2\sqrt{6}$ (3) $\dfrac{3\sqrt{6}}{2}$ (4) $\sqrt{6}$

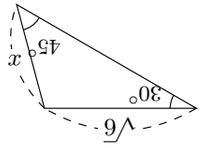
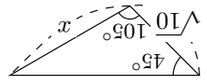
(5)



(6)



(7)



(8)