

§ 6.1 鋭角の三角比

問題 6.1.1 $\frac{\overline{QR}}{\overline{PQ}} = \tan \angle P = \tan 30^\circ = \frac{1}{\sqrt{3}}$ なので, $\overline{QR} = \frac{1}{\sqrt{3}} \overline{PQ} = \frac{\sqrt{6}}{\sqrt{3}} = \sqrt{2}$. また,

$\frac{\overline{PQ}}{\overline{RP}} = \cos \angle P = \cos 30^\circ = \frac{\sqrt{3}}{2}$ なので, $\overline{PR} = \frac{2}{\sqrt{3}} \overline{PQ} = \frac{2}{\sqrt{3}} \sqrt{6} = 2\sqrt{2}$.

問題 6.1.2 正弦の定義より $\frac{\overline{CB}}{\overline{AC}} = \sin \angle A = \frac{3}{4}$ なので, $\overline{BC} = \frac{3}{4} \overline{AC} = \frac{3}{4} \cdot 8 = 6$. ピタゴラスの定理より, $\overline{AB}^2 = \overline{AC}^2 - \overline{BC}^2 = 8^2 - 6^2 = 28$. よって $\overline{AB} = \sqrt{28}$.