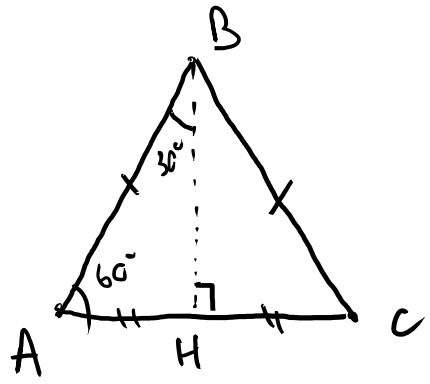
CTM 19



$$\sin 60° = \frac{BH}{AB}$$

$$\cos 60° = \frac{AH}{AB} = \frac{\frac{AB}{2}}{AB} = \frac{1}{2}$$

$$BH = \sqrt{AB^2 - AH^2} = \sqrt{AB^2 - \left(\frac{AB}{2}\right)^2} =$$

$$= \sqrt{AB^2 - \frac{AB^2}{4}} = \sqrt{\frac{4AB^2 - AB^2}{4}} =$$

$$= \sqrt{\frac{3AB^2}{4}} = \frac{\sqrt{3}}{2} AB$$

$$\sin 60° = \frac{BH}{AB} = \frac{\frac{\sqrt{3}}{2} AB}{AB} = \frac{\sqrt{3}}{2}$$ ☒

Aussi : $\sin^2 60° + \cos^2 60° = 1$

$$\sin^2 60° = 1 - \cos^2 60° = 1 - \frac{1}{4} = \frac{3}{4}$$

Donc $\sin 60° = \frac{\sqrt{3}}{2}$ ☒

$$\sin 30° = \frac{AH}{AB} = \frac{\frac{AB}{2}}{AB} = \frac{1}{2}$$

$$\cos 30° = \sqrt{1 - \sin^2 30°} = \sqrt{1 - \frac{1}{4}} = \sqrt{\frac{3}{4}} = \frac{\sqrt{3}}{2}$$

Aussi : $\sin(\alpha) = \cos(90^\circ - \alpha)$

$\cos(\alpha) = \sin(90^\circ - \alpha)$

Donc $\sin(30^\circ) = \cos(90^\circ - 30^\circ) = \cos 60^\circ = \frac{1}{2}$

$\cos(30^\circ) = \sin 60^\circ = \frac{\sqrt{3}}{2}$

$$\text{tg}\, 60^\circ = \frac{\sin 60^\circ}{\cos 60^\circ} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \frac{\sqrt{3}}{2} \times \frac{2}{1} = \sqrt{3}$$

$$\text{tg}\, 30^\circ = \frac{\sin 30^\circ}{\cos 30^\circ} = \frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{2} \times \frac{2}{\sqrt{3}} = \frac{1}{\sqrt{3}}$$