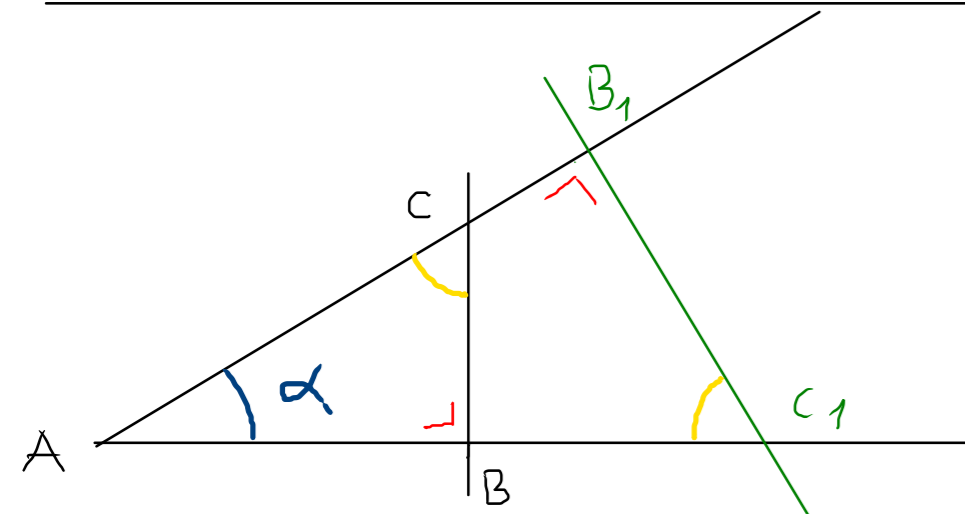


# Trigonométrie dans le triangle rectangle



$$\Delta_1 \quad \begin{cases} AB = 10 \text{ cm} \\ BC = 6 \text{ cm} \\ AC = 12 \text{ cm} \end{cases}$$

$$\Delta_2 \quad \begin{cases} AB_1 = 15 \text{ cm} \\ B_1C_1 = 9 \text{ cm} \\ AC_1 = 18 \text{ cm} \end{cases}$$

Soit  $\alpha = 30^\circ$

Nous avons deux triangles semblables

$$\triangle ABC \sim \triangle AB_1C_1$$

Donc, on a les rapports :

$$1) \frac{AB}{AC} = \frac{AB_1}{AC_1} = \cos(\alpha)$$

$$\frac{5}{6} = \frac{10}{12} = \frac{15}{18} = \frac{5}{6} \approx 0,8\bar{3}$$

$$2) \frac{BC}{AC} = \frac{B_1C_1}{AC_1} = \sin(\alpha)$$

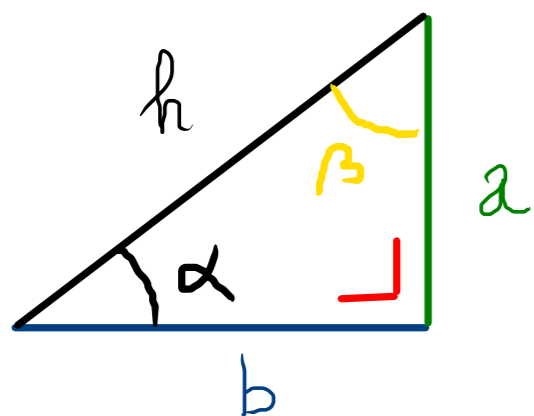
$$\frac{6}{12} = \frac{9}{18} = 0,5$$

$$3) \frac{BC}{AB} = \frac{B_1C_1}{AB_1} = \tan(\alpha)$$

$$\frac{6}{10} = \frac{9}{15} = \frac{3}{5} = 0,6$$

$$4) \frac{AB}{BC} = \frac{AB_1}{B_1C_1} = \cot(\alpha)$$

# Resume



$$\sin(\alpha) = \frac{a}{h} ; \quad \tan(\alpha) = \frac{a}{b}$$

$$\cos(\alpha) = \frac{b}{h} ; \quad \cot(\alpha) = \frac{b}{a}$$

## Formules

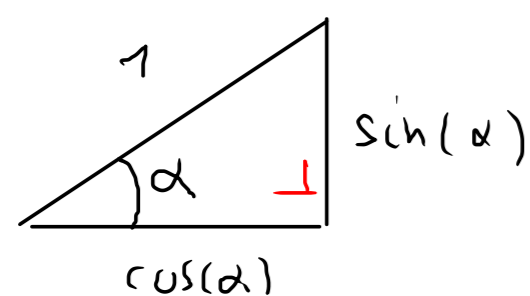
$$\beta = 90^\circ - \alpha$$

$$1) \sin(90^\circ - \alpha) = \cos(\alpha)$$

$$2) \cos(90^\circ - \alpha) = \sin(\alpha)$$

$$3) \tan(90^\circ - \alpha) = \cot(\alpha)$$

$$4) \text{ Si } h = 1, \text{ ou } a ; \quad a = \sin(\alpha) \text{ et } b = \cos(\alpha)$$



$$\sin^2(\alpha) + \cos^2(\alpha) = 1$$

4.2.3 - 4.2.4 - 4.2.5 - 4.2.7 - 4.2.8 - 4.2.10

4.2.11 - 4.2.12 - 4.2.18 - 4.2.20 - 4.2.21 - 4.2.22