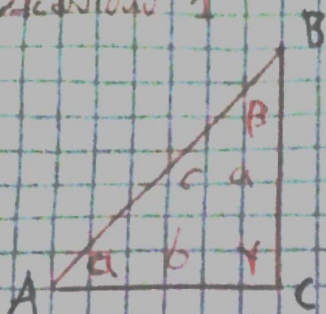


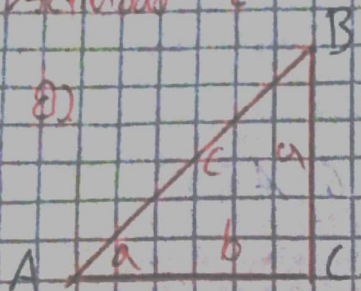
## Actividad 1



## Oja 2

$$\begin{aligned}\cos \alpha &= \frac{b}{c} \\ \sin \alpha &= \frac{a}{c} \\ \tan \alpha &= \frac{a}{b}\end{aligned}$$

## Actividad 2



$$\begin{aligned}\sec \alpha &= \frac{c}{b} \\ \csc \alpha &= \frac{c}{a} \\ \cot \alpha &= \frac{b}{a}\end{aligned}$$

b) Todo triángulo rectángulo posee un ángulo de  $90^\circ$  y dos ángulos agudos, en este caso los ángulos son  $\alpha$  y  $\beta$ , el ángulo recto es  $90^\circ$  complementarios.

c) ¿Que diferencia y que semejanzas observamos entre el  $\sin \alpha$  y la  $\csc \alpha$ ?

El seno de  $\alpha$  y el cosecante se encuentran invertidos mas sin embargo los dos usan el cateto  $a$  y la hipotenusa  $c$ .

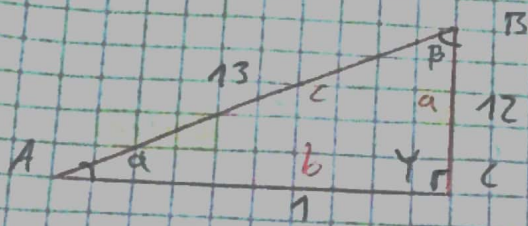
d) ¿Que semejanzas y diferencias encontramos entre el  $\cos \alpha$  y la  $\sec \alpha$ ?

La diferencia es que se encuentran invertidos sin embargo encontramos la diferencia en que trabajan con el cateto  $b$  y la hipotenusa  $c$ .

e) ¿Que diferencia y semejanzas observamos en la  $\tan \alpha$  y la  $\cot \alpha$ ?

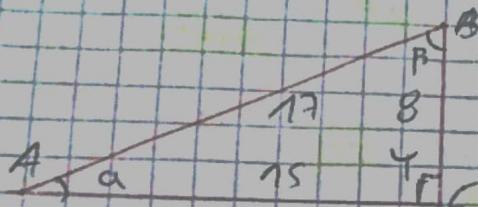
La diferencia es que se invierten en numerador y denominador el cateto adyacente y la hipotenusa, y la semejanza es que son recíprocos.





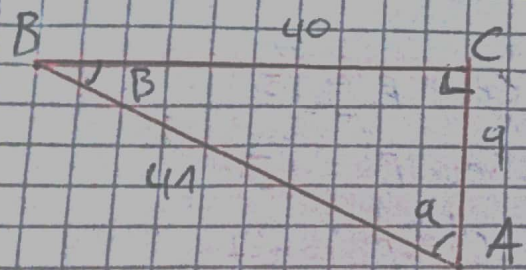
$$\begin{aligned}\text{Sen } \alpha &= \frac{5}{13} \\ \text{Cos } \alpha &= \frac{12}{13} \\ \text{Tan } \alpha &= \frac{5}{12}\end{aligned}$$

$$\begin{aligned}\text{Csc } \alpha &= \frac{13}{5} \\ \text{Sec } \alpha &= \frac{13}{12} \\ \text{Cot } \alpha &= \frac{12}{5}\end{aligned}$$



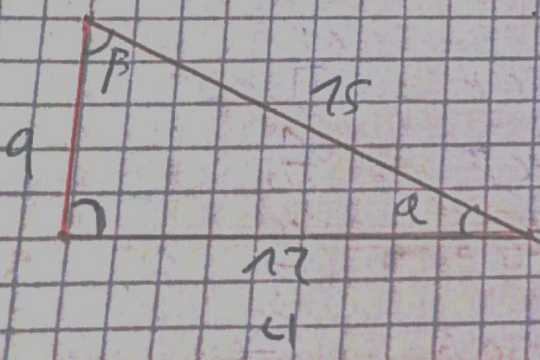
$$\begin{aligned}\text{Sen } \alpha &= \frac{8}{17} \\ \text{Cos } \alpha &= \frac{15}{17} \\ \text{Tan } \alpha &= \frac{8}{15}\end{aligned}$$

$$\begin{aligned}\text{Csc } \alpha &= \frac{17}{8} \\ \text{Sec } \alpha &= \frac{17}{15} \\ \text{Cot } \alpha &= \frac{15}{8}\end{aligned}$$



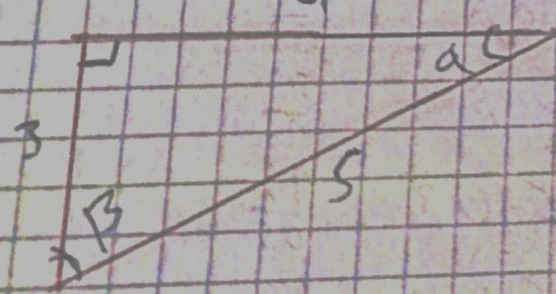
$$\begin{aligned}\text{Sen } \alpha &= \frac{40}{41} \\ \text{Cos } \alpha &= \frac{9}{41} \\ \text{Tan } \alpha &= \frac{40}{9}\end{aligned}$$

$$\begin{aligned}\text{Csc } \alpha &= \frac{41}{40} \\ \text{Sec } \alpha &= \frac{41}{9} \\ \text{Cot } \alpha &= \frac{9}{40}\end{aligned}$$



$$\begin{aligned}\text{Sen } \alpha &= \frac{9}{15} \\ \text{Cos } \alpha &= \frac{12}{15} \\ \text{Tan } \alpha &= \frac{3}{4}\end{aligned}$$

$$\begin{aligned}\text{Csc } \alpha &= \frac{15}{9} \\ \text{Sec } \alpha &= \frac{15}{12} \\ \text{Cot } \alpha &= \frac{12}{9}\end{aligned}$$

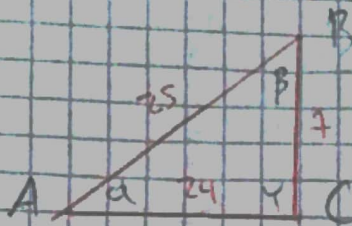


$$\begin{aligned}\text{Sen } \alpha &= \frac{3}{5} \\ \text{Cos } \alpha &= \frac{4}{5} \\ \text{Tan } \alpha &= \frac{3}{4}\end{aligned}$$

$$\begin{aligned}\text{Csc } \alpha &= \frac{5}{3} \\ \text{Sec } \alpha &= \frac{5}{4} \\ \text{Cot } \alpha &= \frac{4}{3}\end{aligned}$$



# Actividad 4



B) Seno:

El seno del ángulo  $B$  se define como la razón entre  $24/25$

BC Coseno:

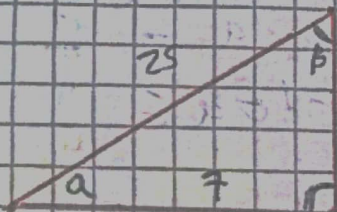
El coseno del ángulo  $B$  se define como la razón entre  $7/25$

C) Tangente:

La tangente del ángulo  $B$  se define como la razón entre  $24/7$

D) Cotangente: La cotangente del ángulo  $B$  se define como la razón entre  $7/24$

# Actividad 5



$$\text{Sen } B = \frac{7}{25}$$

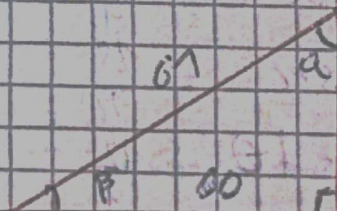
$$\text{Csc } B = \frac{25}{7}$$

$$\text{Cos } B = \frac{24}{25}$$

$$\text{Sec } B = \frac{25}{24}$$

$$\text{Tan } B = \frac{7}{24}$$

$$\text{Ctg } B = \frac{24}{7}$$



$$\text{Sen } B = \frac{11}{61}$$

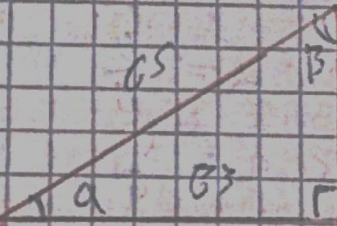
$$\text{Csc } B = \frac{61}{11}$$

$$\text{Cos } B = \frac{60}{61}$$

$$\text{Sec } B = \frac{61}{60}$$

$$\text{Tan } B = \frac{11}{60}$$

$$\text{Ctg } B = \frac{60}{11}$$



$$\text{Sen } B = \frac{16}{65}$$

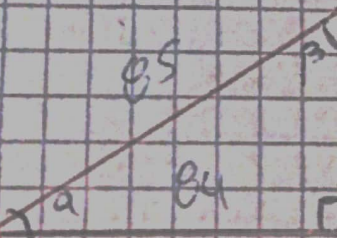
$$\text{Csc } B = \frac{65}{16}$$

$$\text{Cos } B = \frac{63}{65}$$

$$\text{Sec } B = \frac{65}{63}$$

$$\text{Tan } B = \frac{16}{63}$$

$$\text{Ctg } B = \frac{63}{16}$$



$$\text{Sen } B = \frac{17}{85}$$

$$\text{Csc } B = \frac{85}{17}$$

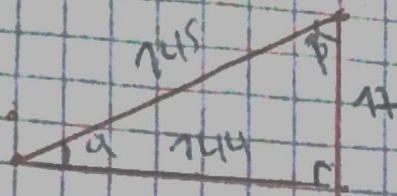
$$\text{Cos } B = \frac{83}{85}$$

$$\text{Sec } B = \frac{85}{83}$$

$$\text{Tan } B = \frac{17}{83}$$

$$\text{Ctg } B = \frac{83}{17}$$





$$\text{Sen } \beta = \frac{1745}{1744}$$

$$\text{Cos } \beta = \frac{17}{1744}$$

$$\text{Tan } \beta = \frac{1745}{17}$$

$$\text{csc } \beta = \frac{1744}{1745}$$

$$\text{sec } \beta = \frac{1744}{17}$$

$$\text{ctg } \beta = \frac{17}{1745}$$

## Actividad 6

### Medida del ángulo

$$\alpha = 75^\circ 30' 55''$$

$$\beta = 175^\circ 30' 45''$$

$$\gamma = 15^\circ 30''$$

$$\delta = 15,54^\circ$$

$$\epsilon = 315''$$

$$\theta = 7200''$$

Ángulos Sexagesimales

$$30^\circ$$

$$\frac{\pi}{2} \cdot \frac{180^\circ}{\pi} = \frac{180^\circ}{2} = 90^\circ$$

$$60^\circ$$

$$\frac{\pi}{4} \cdot \frac{180^\circ}{\pi} = \frac{180^\circ}{4} = 45^\circ$$

### Lectura de la Medida

Setenta y cinco grados, treinta minutos, cincuenta y cinco segundos

ciento, quince grados, treinta minutos, y cincuenta y cinco segundos

quince grados y treinta segundos

quince grados, con cincuenta y cuatro milésimas de grado

treinta y cinco segundos

Siete mil doscientos segundos

Ángulos Radianes

$$\frac{30^\circ \pi}{180} = \frac{\pi}{6}$$

$$\frac{\pi}{2} \text{ [rad]}$$

$$\frac{60^\circ \pi}{180} = \frac{\pi}{3}$$

$$\frac{\pi}{4} \text{ [rad]}$$



Medida Angulo  
Grados

$$\alpha = 30^\circ$$

$$\beta = 45^\circ$$

$$\gamma = 60^\circ$$

$$\delta = 210^\circ$$

$$\epsilon = 270^\circ$$

$$\theta = 315^\circ$$

Radianes

$$\alpha = \frac{\pi}{6}$$

$$\gamma = \frac{\pi}{3}$$

$$\beta = \frac{\pi}{4}$$

$$\delta = \frac{3\pi}{2}$$

$$\epsilon = \frac{3\pi}{2}$$

$$\eta = \frac{7\pi}{6}$$

$$\theta = \frac{7\pi}{4}$$

$$\varphi = \frac{9\pi}{4}$$

Medida Angulo en  
Radianes

$$\frac{30^\circ}{180} = \frac{\pi}{6}$$

$$\frac{45^\circ}{180} = \frac{\pi}{4}$$

$$\frac{60^\circ}{180} = \frac{\pi}{3}$$

$$\frac{210^\circ}{180} = \frac{\pi}{0,8}$$

$$\frac{270^\circ}{180} = \frac{\pi}{0,6}$$

$$\frac{315^\circ}{180} = \frac{\pi}{0,5}$$

Seteaginta?

$$\frac{\frac{\pi}{8} \cdot 180}{\pi} = \frac{180}{8} = 45^\circ$$

$$\frac{\frac{\pi}{5} \cdot 180}{\pi} = \frac{180}{5} = 36^\circ$$

$$\frac{\frac{\pi}{4} \cdot 180}{\pi} = \frac{180}{4} = 45^\circ$$

$$\frac{\frac{3\pi}{2} \cdot 180}{\pi} = \frac{540}{2} = 270^\circ$$

$$\frac{\frac{3\pi}{4} \cdot 180}{\pi} = \frac{540}{4} = 135^\circ$$

$$\frac{\frac{7\pi}{6} \cdot 180}{\pi} = \frac{1260}{6} = 210^\circ$$

$$\frac{1260}{4} = 315^\circ$$

$$\frac{\frac{9\pi}{4} \cdot 180}{\pi} = \frac{1620}{4} = 405^\circ$$