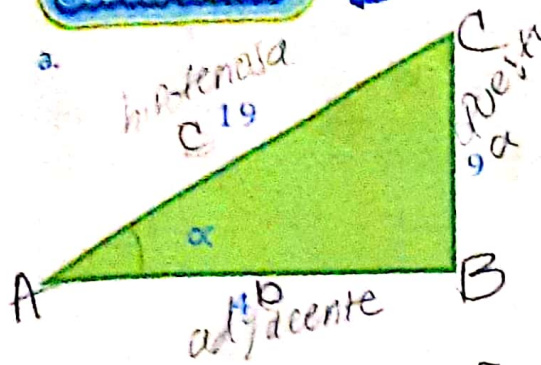
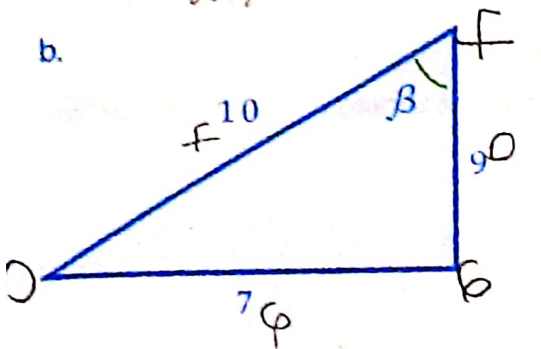


1 Hallar las razones trigonométricas.



$$\begin{aligned} \text{Sen } \alpha &= \frac{9}{19} = \frac{a}{c} \\ \text{Cos } \alpha &= \frac{4}{19} = \frac{b}{c} \\ \text{Tan } \alpha &= \frac{9}{4} = \frac{a}{b} \end{aligned}$$

$$\begin{aligned} \text{Csc } \alpha &= \frac{19}{9} = \frac{1}{9a} \\ \text{Sec } \alpha &= \frac{19}{4} = \frac{1}{4a} \\ \text{Cot } \alpha &= \frac{4}{9} = \frac{1}{9a} \end{aligned}$$



$$\begin{aligned} \text{Sen } \beta &= \frac{10}{10} = \frac{D}{F} \\ \text{Cos } \beta &= \frac{7}{10} = \frac{E}{F} \\ \text{Tan } \beta &= \frac{10}{7} = \frac{D}{E} \end{aligned}$$

$$\begin{aligned} \text{Csc } \beta &= \frac{10}{10} = \frac{1}{9a} \\ \text{Sec } \beta &= \frac{10}{7} = \frac{1}{7a} \\ \text{Cot } \beta &= \frac{7}{10} = \frac{1}{9a} \end{aligned}$$

1 Realizar las siguientes operaciones.

a) $\text{Cot } 30^\circ + \text{Tan } 30^\circ$
 $= \frac{1}{\sqrt{3}} + \frac{1}{\sqrt{3}}$
 $= \frac{1+1}{\sqrt{3}} = \frac{2}{\sqrt{3}}$

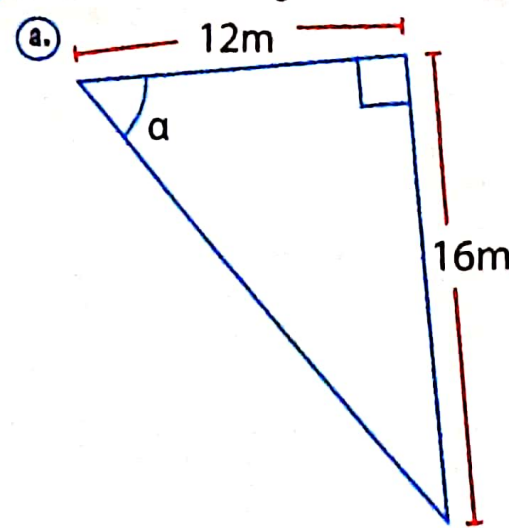
c) $\text{Sen } 30^\circ + \text{Cos } 30^\circ$
 $= \frac{1}{2} + \frac{\sqrt{3}}{2}$
 $= \frac{1+\sqrt{3}}{2} = 2.5$

e) $\text{Cot } 60^\circ + \text{Csc } 60^\circ$
 $= \frac{1}{\sqrt{3}} + \frac{2}{\sqrt{3}}$
 $= \frac{1+2}{\sqrt{3}} = \frac{3}{\sqrt{3}} = \sqrt{3} = 2.5$

b) $\text{Sec } 30^\circ - \text{Cot } 60^\circ$
 $= \frac{2}{\sqrt{3}} - \frac{1}{\sqrt{3}}$
 $= \frac{2-1}{\sqrt{3}} = \frac{1}{\sqrt{3}} = 3.5$

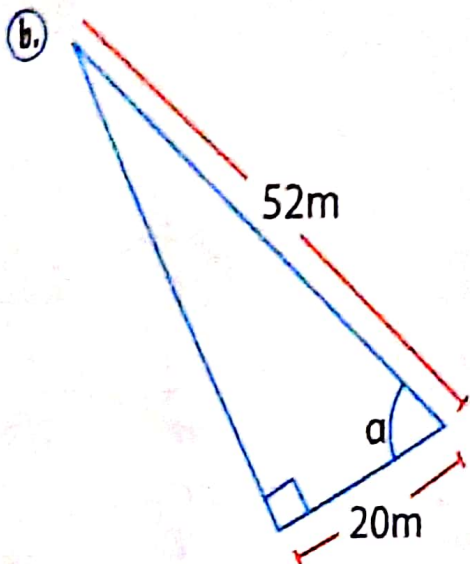
d) $\text{Cos } 60^\circ + \text{Tan } 45^\circ$
 $= \frac{1}{2} + 1$
 $= \frac{1+2}{2} = \frac{3}{2} = 26.5$

2 Halla las razones trigonométricas del ángulo alpha en cada triángulo rectángulo.



$$\begin{aligned} \text{Sen } \alpha &= \frac{16}{20} = \frac{4}{5} = 0.8 \\ \text{Cos } \alpha &= \frac{12}{20} = \frac{3}{5} = 0.6 \\ \text{Tg } \alpha &= \frac{16}{12} = \frac{4}{3} = 1.3333333 \end{aligned}$$

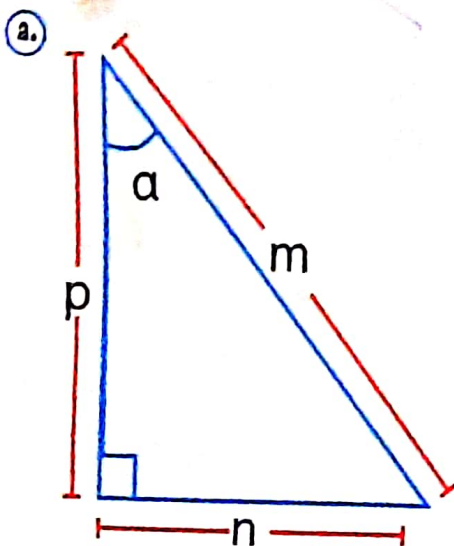
Adicionalmente el ángulo alpha vale, usando por ejemplo el seno, $\text{arc Sen } \alpha = \text{arc Sen } \frac{4}{5}$, $\alpha = 53.1307^\circ$



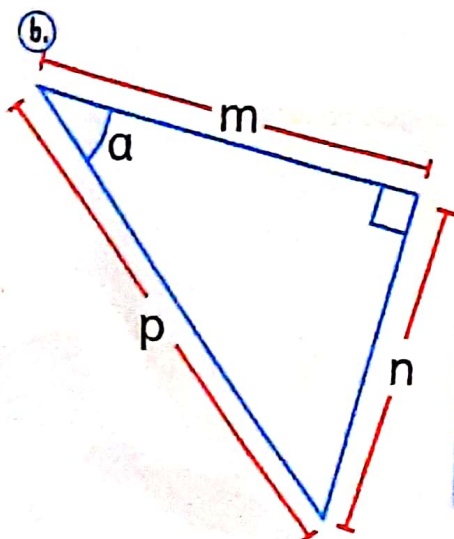
$$\begin{aligned} \text{Sen } \alpha &= \frac{48}{62} = \frac{12}{13} = 0,9230769 \\ \text{Cos } \alpha &= \frac{20}{62} = \frac{5}{13} = 0,384615 \\ \text{Tg } \alpha &= \frac{16}{12} = \frac{4}{3} = 1,333333 \end{aligned}$$

Adicionalmente el ángulo α vale, por ejemplo el seno, arc Sen $\alpha = 67,3801^\circ$

3 Escribe, en función de m, n y p, el seno, el coseno y la tangente del ángulo α de cada uno de los triángulos rectángulos que se muestran a continuación.



$$\begin{aligned} \text{Cos}(\alpha) &= \frac{p}{m} \\ \text{Sen}(\alpha) &= \frac{n}{m} \\ \text{Tan}(\alpha) &= \frac{n}{p} \end{aligned}$$



$$\begin{aligned} \text{Cos}(\alpha) &= \frac{m}{p} \\ \text{Sen}(\alpha) &= \frac{n}{p} \\ \text{Tan}(\alpha) &= \frac{n}{m} \end{aligned}$$