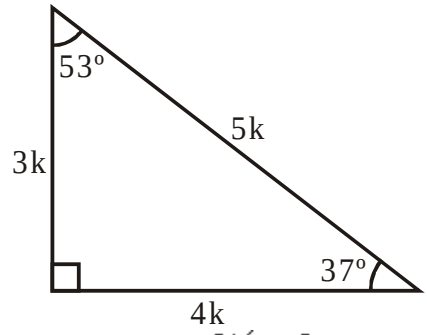
ÁNGULOS AGUDOS DE 37º 53º

■ Principios Teóricos

Para definir la R.T. de 37° y 53° utilizaremos el cuyo lados son proporcionales a 3, 4 y 5.



$$\text{sen}37° = \frac{\text{c.o.}}{\text{h}} = \frac{3k}{5k} = \frac{3}{5}$$

$$\text{sen}53° = \frac{\text{c.o.}}{\text{h}} = \frac{4k}{5k} = \frac{4}{5}$$

$$\cos 37° = \frac{\text{c.a.}}{\text{h}} = \frac{4k}{5k} = \frac{4}{5}$$

$$\cos 53° = \frac{\text{c.a}}{\text{h}} = \frac{3k}{5k} = \frac{3}{5}$$

$$\text{tg}37° = \frac{\text{c.o.}}{\text{c.a.}} = \frac{3k}{4k} = \frac{3}{4}$$

$$\text{tg}53° = \frac{\text{c.o.}}{\text{c.a}} = \frac{4k}{3k} = \frac{4}{3}$$

$$\text{ctg}37° = \frac{\text{c.a.}}{\text{c.o.}} = \frac{4k}{3k} = \frac{4}{3}$$

$$\text{ctg}53° = \frac{\text{c.a.}}{\text{c.o}} = \frac{3k}{4k} = \frac{3}{4}$$

$$\sec 37° = \frac{\text{h}}{\text{c.a.}} = \frac{5k}{4k} = \frac{5}{4}$$

$$\sec 53° = \frac{\text{h}}{\text{c.a.}} = \frac{5k}{3k} = \frac{5}{3}$$

$$\csc 37° = \frac{\text{h}}{\text{c.o.}} = \frac{5k}{3k} = \frac{5}{3}$$

$$\csc 53° = \frac{\text{h}}{\text{c.o.}} = \frac{5k}{4k} = \frac{5}{4}$$

	sen	cos	tg	ctg	sec	csc
37°	$\frac{3}{5}$	$\frac{4}{5}$	$\frac{3}{4}$	$\frac{4}{3}$	$\frac{5}{4}$	$\frac{5}{3}$
53°	$\frac{4}{5}$	$\frac{3}{5}$	$\frac{4}{3}$	$\frac{3}{4}$	$\frac{5}{3}$	$\frac{5}{4}$

Ejemplos:

1) Halla el valor de:

$$M = \frac{tg37° + sen53°}{\cos 37°}$$

Solución:

$$M = \frac{\frac{3}{4} + \frac{4}{5}}{\frac{4}{5}}$$

$$M = \frac{\frac{15+16}{20}}{\frac{4}{5}} = \frac{\frac{31}{20}}{\frac{4}{5}} = \frac{31.\cancel{5}}{\cancel{20}.4} = \frac{31}{16}$$

2) Halla el valor de:

$$\left(\frac{sen53°}{ctg37°}\right)^2$$

Solución:

$$\left(\frac{\frac{4}{5}}{\frac{4}{3}}\right)^2 = \left(\frac{\cancel{12}^{\,3}}{\cancel{20}_{\,5}}\right)^2 = \frac{9}{25}$$

PRACTIQUEMOS

1) Calcular el valor M

$M = 3tg53° + 5\cos 37°$

2) Calcular el valor de:

$P = 3\sec 53° + 3ctg37°$

3) Calcular el valor de M

$M = \cos^2 37° + \cos^2 53°$

4) Calcular el valor de T

$T = \sqrt{\dfrac{\cos 37°}{\sec 37°}}$

5) Calcular el valor de M

$M = 5tg37°$

6) Calcular M

$x \cdot tg37° = 6$

$y \cdot sen37° = 9$

7) Calcular el valor de M

$M = 3\sec 53° + 1$

8) Calcular el valor de M

$M = 5sen37° + tg45°$

TRABAJEMOS EN CASA

1) Calcular el valor de M

$M = 3tg53° + 5\cos 37°$

2) Calcular el valor de P

$P = 5\cos 53° + 4tg37°$

TRIGONOMETRIA

3) Calcular el valor de R

$$R = 40\cos 37°$$

4) Calcular el valor de M

$$M = tg53° + ctg37°$$

5) Calcular:

$$tg37°ctg53°$$

6) Calcular M

$$M = 15tg37° + 5ctg53°$$

7) Calcular el valor de:

$$5\cos 37° - 5\cos 53°$$

8) Calcular el valor de x

$$x + tg53° = \sec 53°$$

9) Calcular el valor de:

$$15\cos 53° - 8tg37°$$

10) Calcular el valor de y

$$y + tg37° = 3$$