

### 6R

- 1 a)  $\alpha = \frac{\pi}{6}$                       d)  $\alpha = \frac{11}{9} \pi$   
 b)  $\alpha = \frac{\pi}{2}$                         e)  $\alpha = \frac{35}{18} \pi$   
 c)  $\alpha = \frac{17}{18} \pi$

Directas	
$\text{sen } \alpha = \frac{\text{cateto opuesto}}{\text{hipotenusa}} = \frac{\overline{AC}}{\overline{BC}}$	
$\text{cos } \alpha = \frac{\text{cateto contiguo}}{\text{hipotenusa}} = \frac{\overline{AB}}{\overline{BC}}$	
$\text{tg } \alpha = \frac{\text{cateto opuesto}}{\text{cateto contiguo}} = \frac{\overline{AC}}{\overline{AB}}$	
Inversas	
$\text{cosec } \alpha = \frac{\text{hipotenusa}}{\text{cateto opuesto}} = \frac{\overline{BC}}{\overline{AC}} = \frac{1}{\text{sen } \alpha}$	
$\text{sec } \alpha = \frac{\text{hipotenusa}}{\text{cateto contiguo}} = \frac{\overline{BC}}{\overline{AB}} = \frac{1}{\text{cos } \alpha}$	
$\text{cotg } \alpha = \frac{\text{cateto contiguo}}{\text{cateto opuesto}} = \frac{\overline{AB}}{\overline{AC}} = \frac{1}{\text{tg } \alpha}$	

	30°	45°	60°
sen	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$
cosec	2	$\sqrt{2}$	$\frac{2\sqrt{3}}{3}$
cos	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$
sec	$\frac{2\sqrt{3}}{3}$	$\sqrt{2}$	2
tg	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$
cotg	$\sqrt{3}$	1	$\frac{\sqrt{3}}{3}$

- 4 a)  $\text{sen } \alpha = 0,923$      $\text{cos } \alpha = 0,385$      $\text{tg } \alpha = 2,4$   
 b)  $\text{sen } \beta = 0,385$      $\text{cos } \beta = -0,923$      $\text{tg } \beta = -0,417$   
 c)  $\text{sen } \gamma = -0,8$      $\text{cos } \gamma = -0,6$      $\text{tg } \gamma = 1,333$   
 d)  $\text{sen } \delta = -0,6$      $\text{cos } \delta = 0,8$      $\text{tg } \delta = -0,75$

- 5 a) +                      b) +                      c) -                      d) -

- 6 a) +                      b) -                      c) -                      d) +

- 7 a) -                      b) +                      c) -                      d) +

- 8 a)  $\text{sen } 32^\circ = 0,530$   
 b)  $\text{cos } 400^\circ = 0,766$   
 c)  $\text{tg } 150^\circ = -0,577$   
 d)  $\text{arcsen } 0,82 = 55^\circ 5' 55''$   
 e)  $\text{arccos } 0,27 = 74^\circ 20' 8''$   
 f)  $\text{arctg } 0,52 = 27^\circ 28' 27''$

- 9 a)  $\text{sen } (45^\circ 8' 7'') = 0,709$   
 b)  $\text{cos } (120^\circ 15' 33'') = -0,504$   
 c)  $\text{tg } (274^\circ 12' 9'') = -13,609$

- 10  $\text{sen } \alpha = \frac{2}{\sqrt{5}}$                        $\text{cos } \alpha = \frac{1}{\sqrt{5}}$   
 $\text{sec } \alpha = \sqrt{5}$                        $\text{cosec } \alpha = \frac{\sqrt{5}}{2}$

- 11  $\text{cos } \beta = 0,866$                        $\text{tg } \beta = 0,577$   
 $\text{sec } \beta = 1,155$                        $\text{cosec } \beta = 2$

- 12  $\text{sen } \gamma = -0,866$                        $\text{tg } \gamma = -1,732$   
 $\text{sec } \gamma = 2$                        $\text{cosec } \gamma = -1,155$



## 6E

- 1 La hipotenusa mide  $\sqrt{136}$  unidades.

$$\operatorname{sen} \alpha = \frac{6}{\sqrt{136}} = \frac{6\sqrt{136}}{136} = \frac{12\sqrt{34}}{136} = \frac{3\sqrt{34}}{34}$$

$$\operatorname{cos} \alpha = \frac{10}{\sqrt{136}} = \frac{10\sqrt{136}}{136} = \frac{20\sqrt{34}}{136} = \frac{5\sqrt{34}}{34}$$

$$\operatorname{tg} \alpha = \frac{6}{10} = \frac{3}{5}$$

- 2 La hipotenusa mide  $\sqrt{160} = 4\sqrt{10}$  unidades.

$$\operatorname{cosec} \alpha = \frac{4\sqrt{10}}{4} = \sqrt{10}$$

$$\operatorname{sec} \alpha = \frac{4\sqrt{10}}{12} = \frac{\sqrt{10}}{3}$$

$$\operatorname{cotg} \alpha = 3$$

- 3  $\operatorname{tg} 30^\circ = \frac{a}{30} \rightarrow a = 30 \cdot \operatorname{tg} 30^\circ = \frac{30\sqrt{3}}{3} = 10\sqrt{3} \text{ cm} = 17,32 \text{ cm}$

- 4 Los metros de cuerda que tendrán que comprar son 56,56 m.

Les costarán 14,14 €.

- 5 a) Positiva. d) Negativa.

- b) Negativa. e) Negativa.

- c) Positiva. f) Negativa.

$$6 \quad \frac{1}{\operatorname{cos}^2 \alpha} - \frac{\operatorname{sen}^2 \alpha}{\operatorname{cos}^2 \alpha} = \frac{1 - \operatorname{sen}^2 \alpha}{\operatorname{cos}^2 \alpha} = \frac{\operatorname{cos}^2 \alpha}{\operatorname{cos}^2 \alpha} = 1$$

$$7 \quad \operatorname{sen} \alpha = -0,17 \quad \operatorname{cos} \alpha = -0,98$$

$$8 \quad \operatorname{cos} \alpha = -0,20 \quad \operatorname{tg} \alpha = -4,92$$

$$9 \quad \operatorname{sen} \alpha = -0,98 \quad \operatorname{tg} \alpha = -5,80$$

$$10 \quad 145^\circ$$

$$11 \quad 338^\circ$$

$$12 \quad 260^\circ$$

