

e) Cert ~~...~~  $\sin a : \operatorname{tg} 60^\circ = \sqrt{3} > 1$

$$\operatorname{tg} \alpha \in (-\infty, +\infty)$$

f) Fals, veure apartat e)

g) Cert, per exemple  $\operatorname{tg} 45^\circ = 1$

h) Fals, si ~~...~~  $\sin \alpha$  i  $\cos \alpha$

tenen signes oposats,  $\operatorname{tg} \alpha < 0$

Exemple  $\operatorname{tg} 120^\circ = -\sqrt{3} < 0$

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a)  $\cos \alpha = \frac{4}{5}$  i  $270^\circ \leq \alpha \leq 360^\circ$

$\Downarrow$   
 $a \in \text{IV Quadrant}$

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

$$\sin^2 \alpha + \left(\frac{4}{5}\right)^2 = 1$$

$$\sin^2 \alpha = 1 - \frac{16}{25}$$

$$\sin^2 \alpha = \frac{9}{25}$$

$$\sin \alpha = -\sqrt{\frac{9}{25}} = -\frac{3}{5}$$

$$\sin \alpha \leq 0$$

$$a \in \text{IV Q.}$$

$$\operatorname{tg} \alpha = \frac{\sin \alpha}{\cos \alpha} = \frac{-\frac{3}{5}}{\frac{4}{5}} = -\frac{3}{4}$$

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$$\sec \alpha = \frac{1}{\sin \alpha} = -\frac{5}{3}$$

$$\sec \alpha = \frac{1}{\cos \alpha} = \frac{5}{4}$$

$$\cot \alpha = \frac{1}{\operatorname{tg} \alpha} = -\frac{4}{3}$$

b)  $\sin \alpha = \frac{3}{5}$  i  $90^\circ \leq \alpha \leq 180^\circ$

$\Downarrow$   
 $a \in \text{II Q.}$

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

$$\frac{9}{25} + \cos^2 \alpha = 1$$

$$\cos^2 \alpha = 1 - \frac{9}{25}$$

$$\cos^2 \alpha = \frac{16}{25}$$

$$\cos \alpha = -\sqrt{\frac{16}{25}} = -\frac{4}{5}$$

$a \in \text{II Q.} \Rightarrow \cos \alpha \leq 0$

$$\operatorname{tg} \alpha = \frac{\sin \alpha}{\cos \alpha} = \frac{\frac{3}{5}}{-\frac{4}{5}} = -\frac{3}{4}$$

$$\sec \alpha = \frac{1}{\sin \alpha} = \frac{5}{3} ; \sec \alpha = \frac{1}{\cos \alpha} = -\frac{5}{4}$$

$$\cot \alpha = \frac{1}{\operatorname{tg} \alpha} = -\frac{4}{3}$$