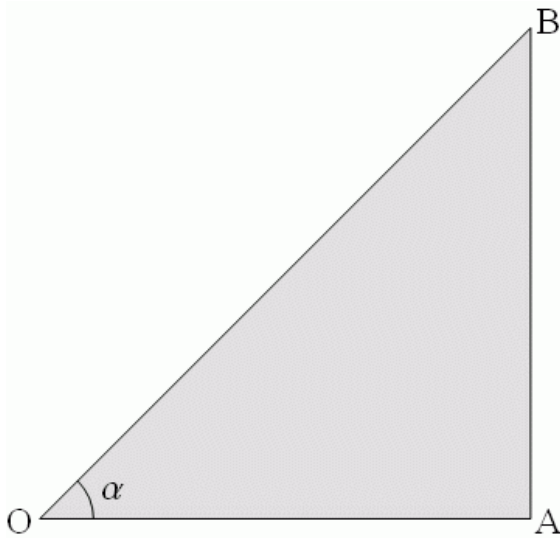


The tangent of an angle is equal to the ratio of its sine divided by its cosine: true or false? Please give detailed answer



By definition:

$$tg\alpha \stackrel{\text{def}}{=} \frac{AB}{OA}$$

$$sin\alpha \stackrel{\text{def}}{=} \frac{AB}{OB}$$

$$cos\alpha \stackrel{\text{def}}{=} \frac{OA}{OB}$$

$$\frac{sin\alpha}{cos\alpha} = \frac{AB}{OB} : \frac{OA}{OB} = \frac{AB \cdot OB}{OB \cdot OA} = \frac{AB}{OA} = tg\alpha$$

Answer: True