



# Introduction to Trigonometry with Applications

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## SIMILAR TRIANGLES

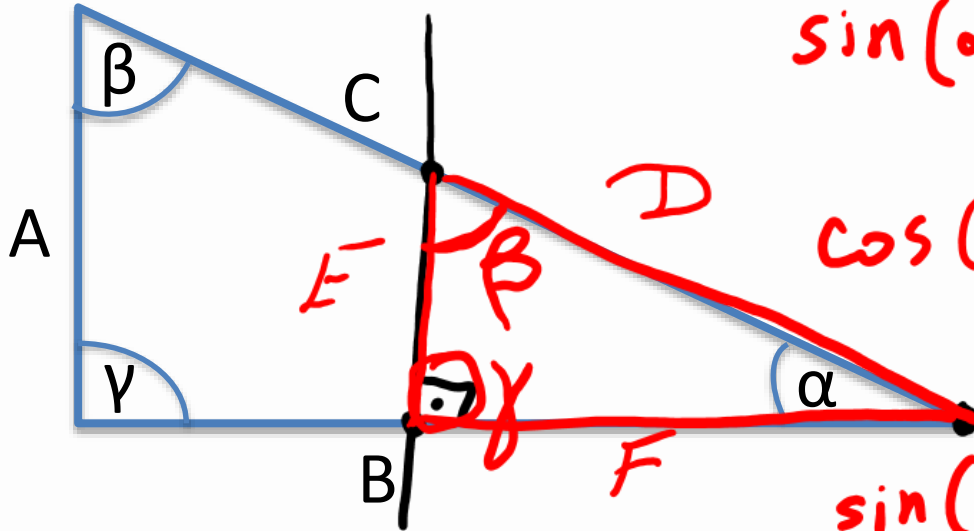
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# Similar Triangles - 1



$$\sin(\alpha) = \frac{A}{C} = \frac{E}{D}$$

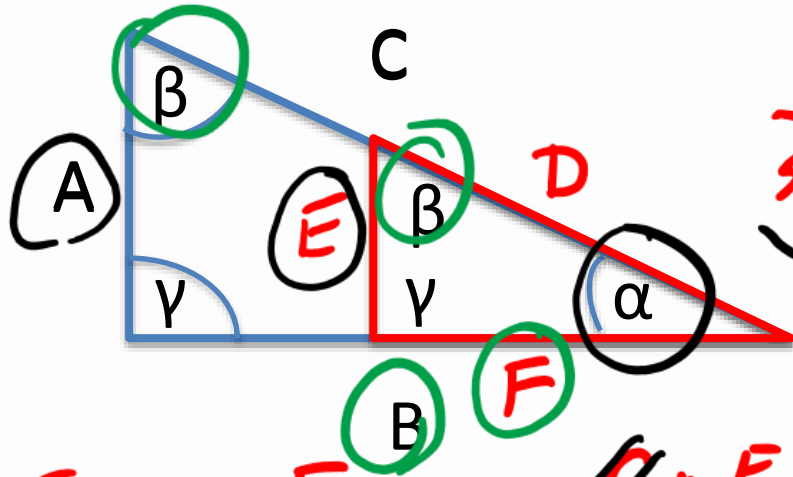
$$\cos(\alpha) = \frac{B}{C} = \frac{F}{D}$$

$$\sin(\beta) = \frac{B}{C} = \frac{F}{D}$$

$$\cos(\beta) = \frac{A}{C} = \frac{E}{D}$$



# Similar Triangles - 2



$$\frac{E}{\sin(\alpha)} = \frac{F}{\sin(\beta)} = \frac{D}{\sin(\gamma)}$$

$$\frac{D}{\sin(90^\circ)} = D$$

$$\frac{E}{A/C} = \frac{F}{B/C} \Rightarrow \frac{\cancel{C} \cdot E}{A} = \frac{\cancel{C} \cdot F}{B} \Rightarrow \frac{E}{A} = \frac{F}{B}$$