



Introduction to Trigonometry with Applications

ANALYSIS USING TRIANGLES – PART A

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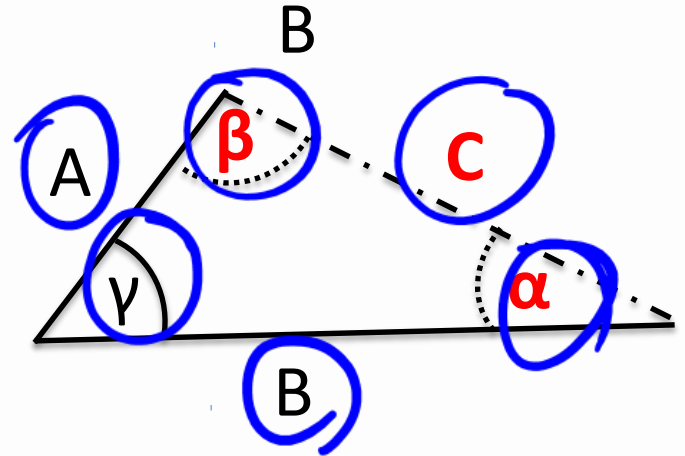
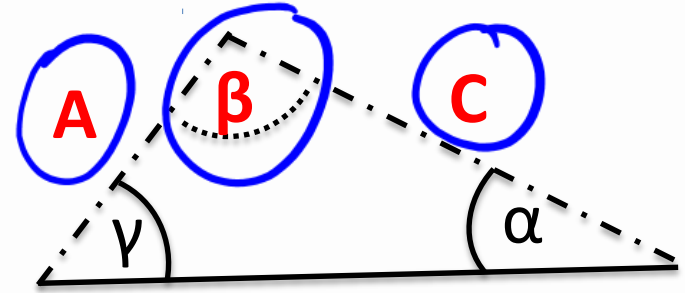
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Analysis using Triangles

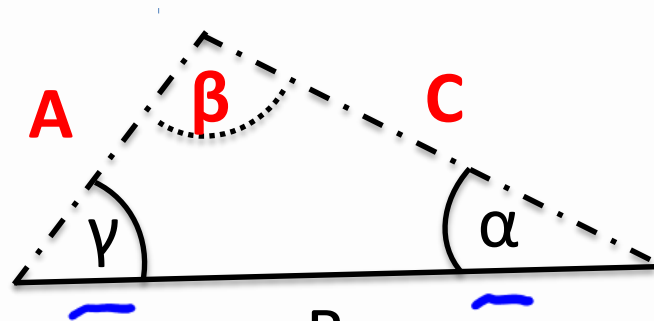
- The analysis will require to estimate the length of each side, the angles and the area of a triangle given the minimum required information





Analysis using Triangles

- Given: one side, B , and adjacent angles (α, γ).
- Find: sides A and C , and angle β .
- Remember the sum of all angles for a triangle is equal to 180° .



$$\alpha + \beta + \gamma = 180^\circ \Rightarrow \beta = 180^\circ - (\alpha + \gamma) \rightarrow (\alpha, \beta, \gamma, B)$$

$$\frac{A}{\sin(\alpha)} = \frac{B}{\sin(\beta)} = \frac{C}{\sin(\gamma)}$$

$$A = \frac{B}{\sin(\beta)} * \sin(\alpha)$$

$$C = \frac{B}{\sin(\beta)} * \sin(\gamma)$$