Introduction to Trigonometry with Applications

AREA OF TRIANGLES – PART B

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Area of Arbitrary Triangle

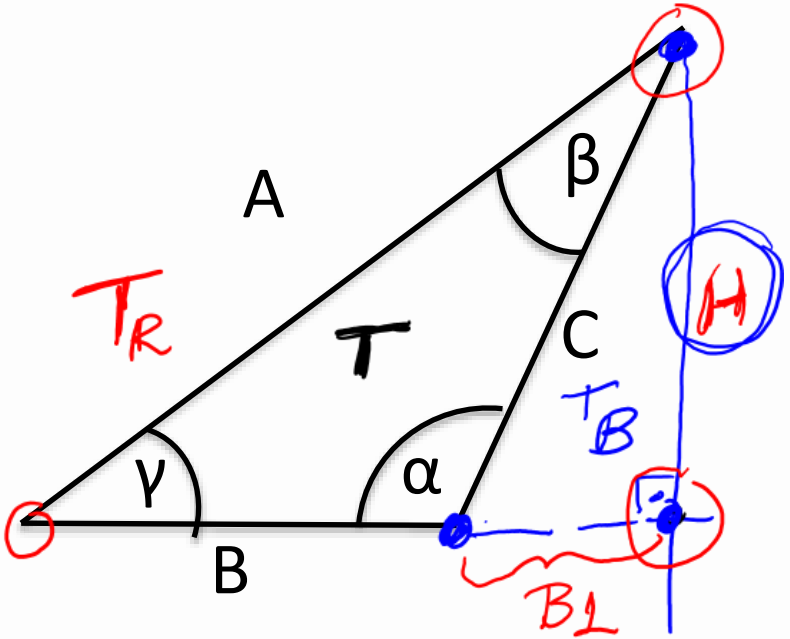
$$T = T_R - T_B$$

$$T_R = \frac{(B + B_1) * H}{2}$$

$$T_B = \frac{B_1 * H}{2}$$

$$T = \frac{(B + B_1) * H}{2} - \frac{B_1 * H}{2}$$

$$T = \frac{B * H}{2}$$



Area of Arbitrary Triangle continued

Assumption: A, B, C, α, β, γ are known

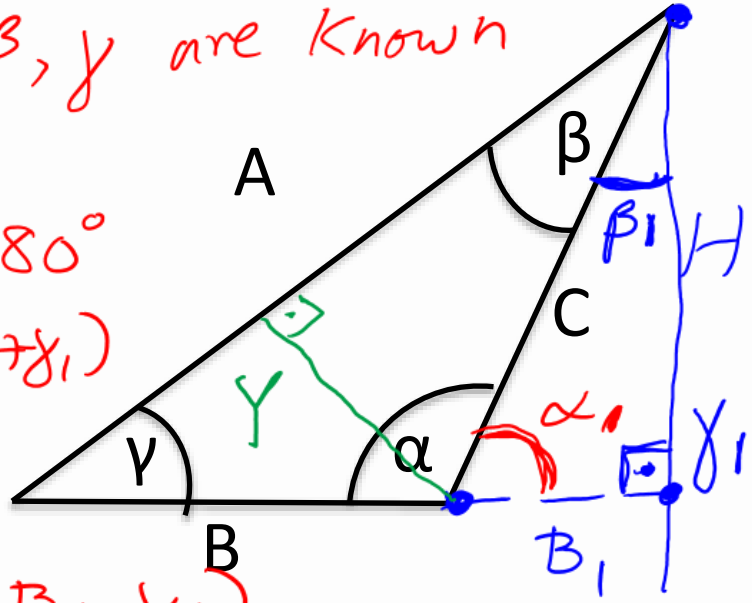
$\alpha + \alpha_1 = 180^\circ$

$\alpha_1 = 180^\circ - \alpha \Rightarrow$ $\alpha_1 + \beta_1 + \gamma_1 = 180^\circ$

$\beta_1 = 180 - (\alpha_1 + \gamma_1)$

C

$\gamma = 90^\circ$



BLUE DOT TRIANGLE

Known: All angles ($\alpha_1, \beta_1, \gamma_1$)

One side (C) from original triangle

$\Rightarrow$ EVALUATE ~~B_1~~ OR (H)

$\text{AREA} = \frac{A * Y}{2}$