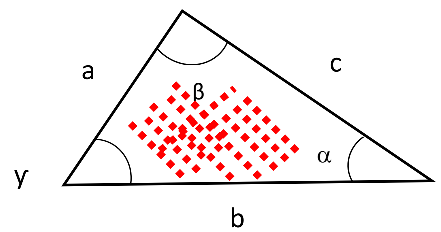
Trigo $\Rightarrow \frac{a}{sin\alpha} = 2R$



Prove $\Rightarrow \frac{\sin(\alpha-\beta)}{\sin(\alpha+\beta)} = \frac{a^2-b^2}{c^2}$

$\text{Sin}(\alpha+\beta) = \text{Sin}(180-\gamma)$

$= \text{Sin}\gamma$

$\frac{a}{sin\alpha} = 2R \quad \Rightarrow a = 2R\sin\alpha$

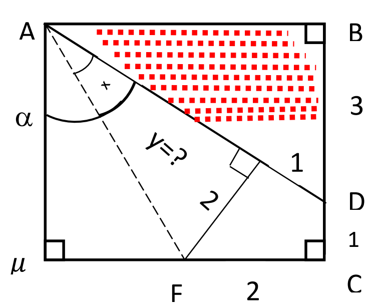
$b = 2R\sin\beta$

$a^2 - b^2 = 4R^2(\sin^2\alpha - \sin^2\beta)$

$\frac{a^2-b^2}{c^2} = \frac{\cancel{4R^2}(sin^2\alpha - sin^2\beta}{\cancel{4R^2}.sin^2\gamma} =$

$= \frac{2sin^2\alpha - 2sin^2\beta}{2sin^2\gamma} = \frac{(1-cos2\alpha)-(1-cos2\beta)}{2sin^2\gamma} = \frac{cos2\beta - cos2\alpha}{2sin^2\gamma}$

$\frac{2\sin(\beta+\alpha)\sin(\alpha-\beta)}{2sin^2\gamma} = \frac{\sin(a-b)}{sin\gamma} = \frac{\sin(\alpha-b)}{\sin(\alpha+\beta)}$



Prove $\alpha = 2x$ $\quad \sphericalangle BDA = \alpha$

$(y+1)^2 = 3^2 + 4^2$ $\quad t_g\alpha = \frac{4}{3}$

$(y+1)^2 = 25 \Rightarrow y + 1 = 5 \Rightarrow y = 4$

We want to prove $\alpha = 2x$

$t_g x = \frac{2}{4} = \frac{1}{2}$

$t_g 2x = \frac{2.\frac{1}{2}}{1-\frac{1}{4}} = \frac{1}{\frac{3}{4}} = \frac{4}{3} = t_g\alpha$

$2x = \alpha$