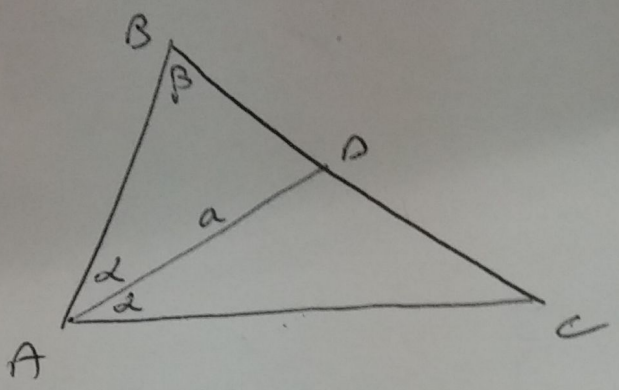
2.65
6



$\triangle ABD$: $\frac{BD}{\sin\alpha} = \frac{a}{\sin\beta}$

$BD = \frac{a\sin\alpha}{\sin\beta}$.

$\triangle ACD$: $\frac{a}{\sin(180-\beta-2\alpha)} = \frac{DC}{\sin\alpha}$

$DC = \frac{a\sin\alpha}{\sin(\beta+2\alpha)}$

$BC = BD + DC = \frac{a\sin\alpha}{\sin\beta} + \frac{a\sin\alpha}{\sin(\beta+2\alpha)} =$

$= a\sin\alpha \left(\frac{\sin(\beta+2\alpha) + \sin\beta}{\sin\beta\sin(\beta+2\alpha)} \right) =$

$= \frac{a\sin\alpha \cdot 2\sin(\alpha+\beta)\cos\alpha}{\sin\beta\sin(\beta+2\alpha)} = \frac{a\sin 2\alpha\sin(\alpha+\beta)}{\sin\beta\sin(\beta+2\alpha)}$