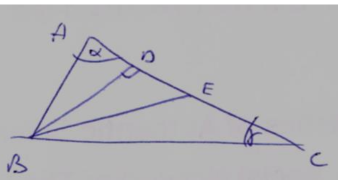
3.96
2




$$S = \frac{AC^2 \cdot \sin\alpha \cdot \sin\gamma}{2\sin(\alpha+\gamma)}$$

$$\frac{AC}{\sin(\alpha+\gamma)} = \frac{AB}{\sin\gamma} = \frac{BC}{\sin\alpha}$$

$$AB = \frac{AC \cdot \sin\gamma}{\sin(\alpha+\gamma)}$$

$$BC = \frac{AC \cdot \sin\alpha}{\sin(\alpha+\gamma)}$$

$$AD = AB\cos\alpha = \frac{AC \cdot \sin\gamma\cos\alpha}{\sin(\alpha+\gamma)}$$

$$DE = AE - AD = \frac{1}{2}AC - \frac{AC \cdot \sin\gamma\cos\alpha}{\sin(\alpha+\gamma)}$$

$$BD = AB\sin\alpha = \frac{AC \cdot \sin\gamma\sin\alpha}{\sin(\alpha+\gamma)}$$

$$\frac{S_{DBE}}{S_{ABC}} = \frac{\frac{DE \cdot \cancel{BD}}{\cancel{2}}}{\frac{AC \cdot \cancel{BD}}{\cancel{2}}} = \frac{DE}{AC}$$

$$S_{BDE} = \frac{BD \cdot DE}{2} =$$

$$= \frac{AC \cdot \sin\gamma\sin\alpha}{\sin(\alpha+\gamma)} \cdot \left(\frac{1}{2}AC - \frac{AC\sin\gamma\cos\alpha}{\sin(\alpha+\gamma)}\right)$$

$$= \frac{AC^2 \sin\gamma\sin\alpha}{\sin(\alpha+\gamma)} \cdot \frac{\sin(\alpha+\gamma) - 2\sin\gamma\cos\alpha}{2\sin(\alpha+\gamma)}$$

$$= S \cdot \frac{\sin(\alpha+\gamma) - 2\sin\gamma\cos\alpha}{\sin(\alpha+\gamma)} =$$

$$= S \cdot \frac{\sin\alpha\cos\gamma - \sin\gamma\cos\alpha}{\sin(\alpha+\gamma)} =$$

$$= \boxed{S \cdot \frac{\sin(\alpha-\gamma)}{\sin(\alpha+\gamma)}}$$