

Conditions

find that $\sin(b+c)\sin(b-c)=?$

Solution

Consider:

$$\sin(b+c)\sin(b-c)$$

As we know:

$$\cos \alpha - \cos \beta = -2 \sin \frac{\alpha + \beta}{2} \sin \frac{\alpha - \beta}{2}$$

That's why

$$\sin(b+c)\sin(b-c) = -\frac{\cos 2b - \cos 2c}{2}$$