

**Answer on Question #52821 – Math – Trigonometry**

$$\operatorname{cosec}(2A) - \cot(2A)$$

**Solution**

$$\begin{aligned}\operatorname{cosec}(2A) - \cot(2A) &= \frac{1}{\sin(2A)} - \frac{\cos(2A)}{\sin(2A)} = \frac{1 - \cos(2A)}{\sin(2A)} = \\ &= \frac{1 - \cos^2(A) + \sin^2(A)}{\sin(2A)} = \frac{\sin^2(A) + \sin^2(A)}{2 \sin(A) \cos(A)} = \frac{2\sin^2(A)}{2 \sin(A) \cos(A)} = \\ &= \frac{\sin(A)}{\cos(A)} = \tan(A)\end{aligned}$$

$$\operatorname{cosec}(2A) - \cot(2A) = \tan(A)$$