55) $\dfrac{1-\sin 2x}{\cos 2x} = \dfrac{\cos 2x}{1+\sin 2x}$

To show this identity is equivalent to show that:

$$(1-\sin 2x)(1+\sin 2x) = \cos^2 2x$$

We have:

$$(1-\sin 2x)(1+\sin 2x) = 1-\sin^2 2x$$
$$= \cos^2 2x$$

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56) $\dfrac{\sin 4x}{1-\cos 4x} \cdot \dfrac{1-\cos 2x}{\cos 2x} = tg\, x$

$\rightarrow \dfrac{\sin 4x}{1-\cos 4x} \cdot \dfrac{1-\cos 2x}{\cos 2x} =$

$= \dfrac{2\sin 2x \cancel{\cos 2x}}{1-\cos 4x} \quad \dfrac{1-\cos 2x}{\cancel{\cos 2x}}$

$\cos 4x = \cos 2.2x$
$= 1-2\sin^2 2x$

$= \dfrac{2\sin 2x}{1-\cos 4x} \cdot (1-\cos 2x)$

$1-\cos 2x =$
$= 1-(1-2\sin^2 x)$
$= 2\sin^2 x$

$= \dfrac{2\sin 2x}{1-(1-2\sin^2 2x)} \cdot (1-\cos 2x) =$

$= \dfrac{\cancel{2}\cancel{\sin 2x}}{\cancel{2}\sin^{\cancel{2}} 2x} \cdot (1-\cos 2x) = \dfrac{1-\cos 2x}{\sin 2x}$

$\rightarrow$