

$$29. \sin^2\left(\frac{\theta}{2}\right) = \frac{\tan(\theta) - \sin(\theta)}{2 \tan(\theta)}$$

$$\begin{aligned} \sin^2\left(\frac{\theta}{2}\right) &= \left(\sqrt{\frac{1 - \cos(\theta)}{2}}\right)^2 \\ &= \frac{1 - \cos(\theta)}{2} \\ &= \frac{1 - \cos(\theta)}{2} \cdot \frac{\tan(\theta)}{\tan(\theta)} \\ &= \frac{\tan(\theta) - \cos(\theta) \tan(\theta)}{2 \tan(\theta)} \\ &= \frac{\tan(\theta) - \sin(\theta)}{2 \tan(\theta)} \end{aligned}$$

$$36. 2 \sin(2x) \cos(x) - \sin(x) = 0$$

$$2 \sin(2x) \cos(x) - \sin(x) = 0$$

$$2 \cdot 2 \sin(x) \cos(x) \cos(x) - \sin(x) = 0$$

$$4 \sin(x) \cos^2(x) - \sin(x) = 0$$

$$\sin(x)[4 \cos^2(x) - 1] = 0$$

so,

$$\sin(x) = 0$$

$$x = 0, \pi$$

or

$$4 \cos^2(x) - 1 = 0$$

$$4 \cos^2(x) = 1$$

$$\cos^2(x) = 1/4$$

$$\cos(x) = \pm 1/2$$

$$x = \pi/3, 2\pi/3, 4\pi/3, 5\pi/3$$