Name : _____

Product-to-Sum and Sum-to-Product Identities

Sum-to-Product Identities

$$\sin \theta + \sin \Phi \;=\; 2 \sin\left(\frac{\theta + \Phi}{2}\right) \cos\left(\frac{\theta - \Phi}{2}\right)$$

$$\sin \theta \qquad \qquad \qquad$$

$$\cos \theta \qquad \qquad \qquad$$

$$\cos \theta \qquad \qquad \qquad$$

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Product-to-Sum

$$\sin \qquad \qquad \qquad \Phi)$$

$$\cos \qquad \qquad \qquad \Phi)$$

$$\sin \theta \cos \Phi \;=\; \frac{\sin (\theta + \Phi) + \sin (\theta - \Phi)}{2}$$

$$\cos \theta \sin \Phi \;=\; \frac{\sin (\theta + \Phi) - \sin (\theta - \Phi)}{2}$$