**EXERCISE 3.2:** If the two sinusoids being added were to have nonzero phases, that is,

$$x(t) = \cos(2\pi f_1 t + \varphi_1) + \cos(2\pi f_2 t + \varphi_2)$$

the frequencies,  $f_c$  and  $f_{\Delta}$ , would remain the same, but the phases,  $\varphi_{\Delta}$  and  $\varphi_c$ , would change.

$$x(t) = 2\cos(2\pi f_{\Delta}t + \varphi_{\Delta})\cos(2\pi f_c t + \varphi_c)$$

Determine the phases needed in the product representation.

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