Novamente, seguindo a análise que foi feita no item (a) vemos que a função pode representar

$\sin \frac{\pi}{8}$ quanto

$\sin\left(\frac{\pi}{2} - \frac{\pi}{8}\right) = \sin\left(\frac{3\pi}{8}\right)$

Mas,

$\sin \frac{\pi}{8} < \sin \frac{3\pi}{8}$

logo devemos pegar para $\sin \frac{\pi}{8}$ a menor das soluções.

$\sin \frac{\pi}{8} = \sqrt{\frac{1 - \frac{1}{\sqrt{2}}}{2}}$

Logo

$\sin -\frac{\pi}{8} = -\sin \frac{\pi}{8}$

$\therefore$ $\boxed{\sin -\frac{\pi}{8} = -\sqrt{\frac{1-\frac{1}{\sqrt{2}}}{2}}}$

e) $\cos \frac{\pi}{16}$

$\cos \frac{\pi}{4} = \cos 4 \frac{\pi}{16}$

Mas do exercício 27(a) já vimos que

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

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

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

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

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

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

$= 8\cos^4 x - 8\cos^2 x + 2 - 1$

$\|\cos 4x = 8\cos^4 x - 8\cos^2 x + 1\|$

$\therefore$

$\cos \frac{\pi}{4} = \cos 4 \frac{\pi}{16}$

$\frac{\sqrt{2}}{2} = 8\cos^4 \frac{\pi}{16} - 8\cos^2 \frac{\pi}{16} + 1$

$8\cos^4 \frac{\pi}{16} - 8\cos^2 \frac{\pi}{16} + \left(1 - \frac{\sqrt{2}}{2}\right) = 0$

$\cos^4 \frac{\pi}{16} - \cos^2 \frac{\pi}{16} + \left(\frac{1}{8} - \frac{\sqrt{2}}{16}\right) = 0$