

**Problema 4.** Se consideră numărul complex  $z = \cos \frac{2\pi}{11} + i \sin \frac{2\pi}{11}$ .

a) Calculați  $z + z^3 + z^4 + z^5 + z^9$ .

b) Calculați  $\sin \frac{\pi}{11} + \sin \frac{2\pi}{11} + \sin \frac{3\pi}{11} - \sin \frac{4\pi}{11} + \sin \frac{5\pi}{11}$ .