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Zadanie domowe 1

Znajdź wszystkie pierwiastki równania $z^5 = -\frac{1}{\sqrt{2}} + i\frac{1}{\sqrt{2}}$

$\sqrt{(-\frac{1}{\sqrt{2}})^2 + (\frac{1}{\sqrt{2}})^2} = 1$

$-\frac{1}{\sqrt{2}} + i\frac{1}{\sqrt{2}} = 1 \cdot (\cos\frac{3}{4}\pi + i \cdot \sin\frac{3}{4}\pi)$

$\cos\frac{3}{4}\pi = -\frac{1}{\sqrt{2}}$

$\sin\frac{3}{4}\pi = \frac{1}{\sqrt{2}}$

$\frac{\frac{3}{4}\pi + 2k\pi}{5}$

$k = \{0, 1, 2, 3, 4\}$

pierwiastki :

$(\cos\frac{3}{20}\pi + i \cdot \sin\frac{3}{20}\pi)$

$(\cos\frac{11}{20}\pi + i \cdot \sin\frac{11}{20}\pi)$

$(\cos\frac{19}{20}\pi + i \cdot \sin\frac{19}{20}\pi)$

$(\cos\frac{27}{20}\pi + i \cdot \sin\frac{27}{20}\pi)$

$(\cos\frac{35}{20}\pi + i \cdot \sin\frac{35}{20}\pi) = (\cos\frac{7}{4}\pi + i \cdot \sin\frac{7}{4}\pi) = \frac{1}{\sqrt{2}} - i\frac{1}{\sqrt{2}} =$

$= \frac{\sqrt{2}}{2} - i\frac{\sqrt{2}}{2}$