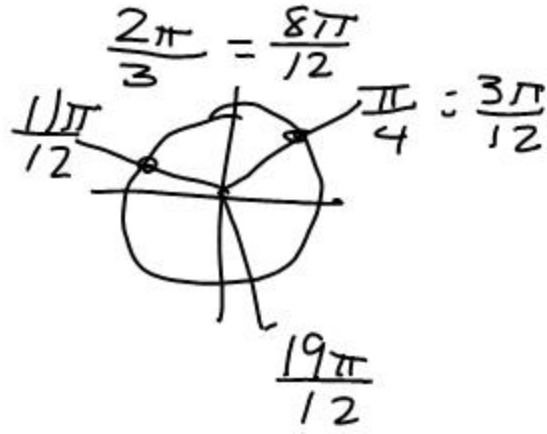
#11. $\left(\text{cis}\,\frac{3\pi}{4}\right)^{\frac{1}{3}} = \text{cis}\,\frac{\pi}{4}$



$$\begin{cases} \text{cis}\,\frac{\pi}{4} = \frac{1}{\sqrt{2}} + \frac{1}{\sqrt{2}}i \\ \text{cis}\,\frac{11\pi}{12} \\ \text{cis}\,\frac{19\pi}{12} \end{cases}$$

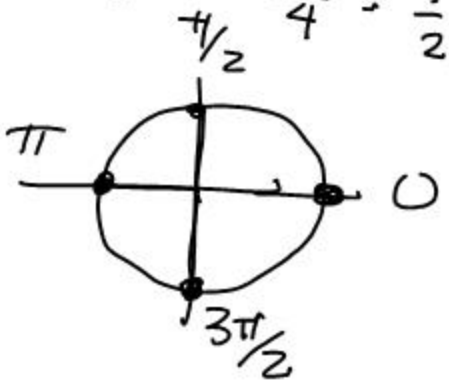
Find the 4 4th roots of unity

$1 = \text{cis}\,0$

$(\text{cis}\,0)^{\frac{1}{4}} = \text{cis}\,0 = \pm 1$

$\pm i$

$2\pi/4 = \pi/2$



$\left(5\,\text{cis}\,\frac{\pi}{6}\right)$

$1+i$ square roots

$\sqrt{2}\,\text{cis}\,\frac{\pi}{4}\Big)^{\frac{1}{2}}$

$2^{1/4}\,\text{cis}\,\frac{\pi}{8}$ or $2^{1/4}\,\text{cis}\,\frac{9\pi}{8}$

• 1A #4g ~~(A)~~ $\frac{3n}{4n+1} \to \frac{3}{4}$

$(-1)^n \frac{3n}{4n+1}$

diverges

$\frac{3{,}000{,}000}{4{,}000{,}001}$

4c $\left(\frac{1}{n}\right)^{(-1)^n} = \{1, \frac{1}{2}, 3, \frac{1}{4}, 5, \ldots\}$

divergent — convergent subsequence

4e $n^3 - n^2 \to \infty$ divergent

$\frac{1{,}000{,}000{,}000}{1{,}000{,}000}$

4g $\{1, 1, \frac{1}{3}, 1, \frac{1}{5}, 1, \ldots\}$ divergent

1c

#1a. $\frac{5}{2}$

#1f 1

#1h $\frac{(3)^{n+1} + 7^n}{4^{n-1} + e^n} \to \frac{7}{4}$

HW (Landboard box work, ...)

1A #4 b, d, f, h

1c #1 b, c, e, g