

MTH 317/617  
Quiz #2

1. Find all possible solutions in  $\mathbb{C}$  to the equation

$$z^3 = -8i.$$

You can express your solutions in exponential form.

$$\begin{aligned} -8i &= 8e^{i3\pi/2 + 2\pi i n} \\ \Rightarrow z &= 8^{1/3} e^{i\pi/2 + 2\pi i n/3}, \\ &\text{where } n \in \mathbb{Z}. \end{aligned}$$