

Complex Numbers - Exercises (Part 2) (1 page; 13/2/16)

(1) Find $\arg\{-\sin\left(\frac{\pi}{3}\right) + i\cos\left(\frac{\pi}{3}\right)\}$, other than by just plotting the point in the Argand diagram.

(2) Find the mod and arg of $e^{\frac{7\pi i}{10}} - e^{-\frac{9\pi i}{10}}$

(3) Solve the equation $(1 + i)z^2 + (8 - 2i)z - 5(1 + 3i) = 0$

(4) Find i^i in cartesian form (ie $x + yi$)

(5) How are the complex numbers $\cos\theta + i\sin\theta$ and $\sin\theta + i\cos\theta$ related?