Complex Numbers Test 2: Representations

1. Express the following complex numbers in the form $e^{\iota\theta}$.

i)

$$z = 1 + i$$

ii)

$$z = -1 + i\sqrt{3}$$

iii)

$$z = -1 - i$$

iv)

$$z = \sqrt{3} - i$$

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2. Convert the following polar forms to rectangular form:

i)

$$z = 2e^{i\frac{\pi}{4}}$$

ii)

$$z = 3e^{i\frac{2\pi}{3}}$$

iii)

$$z = 4e^{i\pi}$$

iv)

$$z = 5e^{-i\frac{\pi}{6}}$$

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3. Divide complex number in 1.iii by complex number in part 1.iv in both rectangular and polar form.

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bishaltwr@gmail.com