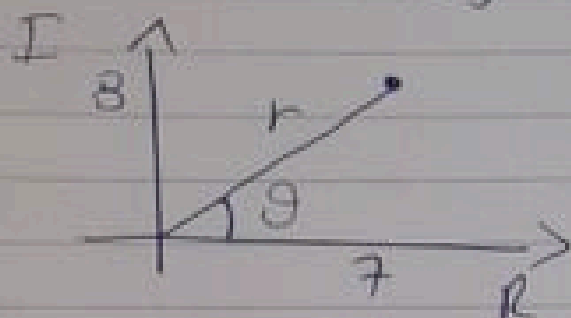


Demetrius R
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6/01/2021

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$$(ii) \quad z_1 - z_3 = 3 + 7j + 4 + j \\ = 7 + 8j$$



$$r^2 = 7^2 + 8^2 \\ r = \sqrt{113}$$

$$7 = r \cos \theta$$

$$8 = r \sin \theta$$

$$\Rightarrow \tan \theta = \frac{8}{7}$$

$$\theta = \arctan \frac{8}{7} = 48.81^\circ$$

$$\Rightarrow z = \sqrt{113} (\cos(48.81^\circ) + j \sin(48.81^\circ))$$

$$\Rightarrow \boxed{z = 7.00056 + j 7.9995}$$

$$(iii) \quad \frac{z_1}{z_2} = \frac{3 + 7j}{2 + 10j}$$