

24/09/2022

Tarea
Calcular el valor de Z y expresarlo en todas sus formas con su gráfico.

$$Z = (2+6i) - (3-i)$$

$$Z = -1+7i$$

$$\begin{aligned} ① \quad Z &= (2+6i) - (3-i) \\ Z &= 2+6i-3+i \\ Z &= -1+7i \end{aligned}$$

$$② \quad (-1, 7)$$

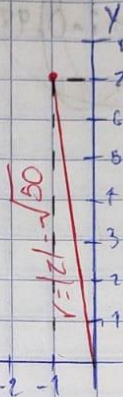
$$\begin{aligned} ③ \quad r = |z| &= \sqrt{a^2 + b^2} \\ r = |z| &= \sqrt{(-1)^2 + (7)^2} \\ r = |z| &= \sqrt{1+49} \\ r = |z| &= \sqrt{50} \end{aligned}$$

$$\begin{aligned} \theta &= \tan^{-1} \frac{b}{a} \\ \theta &= \tan^{-1} \frac{7}{-1} \end{aligned}$$

$$\begin{aligned} \theta &= -81.86^\circ \\ \text{Ajuste} &= 180^\circ - 81.86^\circ \\ &= 98.14^\circ \end{aligned}$$

$$\begin{aligned} \hookrightarrow 90^\circ - 81.86^\circ &= 8.14^\circ \\ 8.14^\circ + 90^\circ &= \underline{\underline{98.14^\circ}} \end{aligned}$$

$$\theta = \underline{\underline{98.14^\circ}}$$



24/02/2022

$$\begin{aligned}\textcircled{4} \quad Z &= r(\cos \theta + i \cdot \sin \theta) \\ Z &= \sqrt{50}(\cos 98.14^\circ + i \cdot \sin 98.14^\circ) \\ Z &= \sqrt{50} \text{cis } 98.14^\circ\end{aligned}$$

$$\begin{aligned}\textcircled{5} \quad Z &= r \angle \theta \\ Z &= \sqrt{50} \angle 98.14^\circ\end{aligned}$$

$$\begin{aligned}\textcircled{6} \quad Z &= r e^{i\theta} \\ Z &= \sqrt{50} e^{i\theta}\end{aligned}$$

$$\theta_{\text{rad}} = \frac{98.14^\circ \pi}{180^\circ}$$

$$Z = \sqrt{50} e^{i \frac{98.14^\circ \pi}{180^\circ}}$$

$$Z = \sqrt{50} e^{i 0.541 \pi}$$