



Exercícios: Forma trigonométrica ou polar

Calcule o módulo, o argumento e escreva o número complexo z na forma trigonométrica.

1. $z = 5 + 5i$

2. $z = 1 - i$

3. $z = -2 + 2i$

4. $z = -1 - i$

5. $z = 1 + \sqrt{3}i$

6. $z = \sqrt{3} + i$

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

8. $z = 2i$

9. $z = 5$

10. $z = -5$

Coloque na forma algébrica:

11. $z = 10 \left(\cos \frac{\pi}{3} + i \operatorname{sen} \frac{\pi}{3} \right)$

12. $z = 2(\cos 135^\circ + i \operatorname{sen} 135^\circ)$

Gabarito:

1. $\rho = 5\sqrt{2}$
 $\theta = \frac{\pi}{4}$

$$z = 5\sqrt{2} \left(\cos \frac{\pi}{4} + i \operatorname{sen} \frac{\pi}{4} \right)$$

2. $\rho = \sqrt{2}$
 $\theta = \frac{7\pi}{4}$

$$z = \sqrt{2} \left(\cos \frac{7\pi}{4} + i \operatorname{sen} \frac{7\pi}{4} \right)$$

3. $\rho = 2\sqrt{2}$
 $\theta = \frac{3\pi}{4}$

$$z = 2\sqrt{2} \left(\cos \frac{3\pi}{4} + i \operatorname{sen} \frac{3\pi}{4} \right)$$

4. $\rho = \sqrt{2}$

$$\theta = \frac{5\pi}{4}$$

$$z = \sqrt{2} \left(\cos \frac{5\pi}{4} + i \operatorname{sen} \frac{5\pi}{4} \right)$$

5. $\rho = 2$
 $\theta = \frac{\pi}{3}$

$$z = 2 \left(\cos \frac{\pi}{3} + i \operatorname{sen} \frac{\pi}{3} \right)$$

6. $\rho = 2$
 $\theta = \frac{\pi}{6}$

$$z = 2 \left(\cos \frac{\pi}{6} + i \operatorname{sen} \frac{\pi}{6} \right)$$

7. $\rho = 2$
 $\theta = \frac{11\pi}{6}$

$$z = 2 \left(\cos \frac{11\pi}{6} + i \operatorname{sen} \frac{11\pi}{6} \right)$$

8. $\rho = 2$
 $\theta = \frac{\pi}{2}$

$$z = 2 \left(\cos \frac{\pi}{2} + i \operatorname{sen} \frac{\pi}{2} \right)$$

9. $\rho = 5$
 $\theta = 0$

$$z = 5(\cos \theta + i \operatorname{sen} \theta)$$

10. $\rho = 5$
 $\theta = \pi$

$$z = 5(\cos \pi + i \operatorname{sen} \pi)$$

11. $5 + 5\sqrt{3}i$

12. $-\sqrt{2} + \sqrt{2}i$