

SOLUCIONES DE PASAR DE FORMA CARTESIANA A POLAR

1. Pasa los siguientes números complejos a forma polar:

RECORDATORIO: $z = x + y \cdot i$

$$\alpha = \text{arc tg} \frac{y}{x} \quad \left\{ \begin{array}{l} \frac{+y}{+x} = \alpha \\ \frac{+y}{-x} = 180^\circ - \alpha \\ \frac{-y}{-x} = 180^\circ + \alpha \\ \frac{-y}{+x} = 360^\circ - \alpha \end{array} \right. \quad \left\{ \begin{array}{l} \frac{0}{+x} = 0^\circ \\ \frac{0}{-x} = 180^\circ \\ \frac{+y}{0} = 90^\circ \\ \frac{-y}{0} = 270^\circ \end{array} \right.$$

- $5+2i$

$$r = \sqrt{5^2 + 2^2} = 5.38; \alpha = \text{arc tan} \frac{2}{5} = 21.8$$

5,38 21.8°

- $12-9i$

$$r = \sqrt{12^2 + 9^2} = 15; \alpha = \text{arc tan} \frac{-9}{12} = 360 - 36.86 = 323.14$$

15 $323,14^\circ$

- $10-12i$

$$r = \sqrt{10^2 + 12^2} = 15,62; \alpha = \text{arc tan} \frac{-12}{10} = 360 - 50,19$$

$= 309,81$

15,62 $309,81^\circ$

- $-7-3i$

$$r = \sqrt{7^2 + 3^2} = 7,61; \alpha = \text{arc tan} \frac{-3}{-7} = 180 + 23.19 = 203.19$$

7,61 $203,19^\circ$

- -25+6i

$$r = \sqrt{25^2 + 6^2} = 25,7; \alpha = \arctan \frac{6}{-25} = 180 - 13,49 = 166,5$$

25,7 $166,5^\circ$

- 72+1i

$$r = \sqrt{72^2 + 1^2} = 72; \alpha = \arctan \frac{1}{72} = 0,79$$

72 $0,79^\circ$

- -15-4i

$$r = \sqrt{15^2 + 4^2} = 15,52; \alpha = \arctan \frac{-4}{-15} = 180 + 14,93$$

= 323,14
15,52 $194,93^\circ$

- 7-9i

$$r = \sqrt{7^2 + 9^2} = 11,4; \alpha = \arctan \frac{-9}{7} = 360 - 52,12 = 307,874$$

11,4 $307,874^\circ$

- -90+31i

$$r = \sqrt{90^2 + 31^2} = 95,19; \alpha = \arctan \frac{31}{-90} = 180 - 19 = 161$$

95,19 161°