1.04*

lördag 20 januari 2024 18:01

a)

$A = 2 \qquad \theta = \frac{2\pi}{3}$

$b + ai = -1 + \sqrt{3}\,i = 2e^{i\theta}$

$-\frac{1}{2} + \frac{\sqrt{3}}{2}\,i = e^{i\theta} = e^{i 2\pi/3}$

b)

$A = \sqrt{20}$

$b + ai = -4 - 2i = \sqrt{20}\,e^{i\theta}$

$-\frac{4}{2\sqrt{5}} - \frac{2}{2\sqrt{5}}\,i = -\frac{2}{\sqrt{5}} - \frac{1}{\sqrt{5}}\,i$

$\theta = \arctan\frac{a}{b} \quad (\text{om } b > 0)$

$\theta = \pi + \arctan\frac{a}{b} \quad (\text{om } b < 0)$

$\theta = \pi + \arctan\frac{1}{2}$