Answer on Question #58294 – Math – Complex Analysis

Question

Suppose z is a complex number and |z|= 4 ,
arg(z)=π/2
then z = ...

Solution

The exponential form of the complex number z is given by

$$z = |z|e^{iarg(z)} = 4e^{i\frac{\pi}{2}}=4(\cos\frac{\pi}{2} + isin\frac{\pi}{2})=4i,$$

because

$$e^{i\theta} = \cos(\theta) + isin(\theta)$$

according to Euler's formula.

Answer: z=4*i*.