(1 point) What is the square root of i? (That is, what is $\sqrt{i}$?)

- A. $-i$
- B. -1
- C. $\frac{1}{\sqrt{2}}(1+i)$
- D. $(1-i)$
- E. Does not exist

(1 point) Write each of the given numbers in the polar form $re^{i\theta}$, $-\pi < \theta \leq \pi$.

(a) $\left(\cos\frac{2\pi}{9} + i\sin\frac{2\pi}{9}\right)^3$

$r =$ 1 , $\theta =$ (2pi)/3 ,

(b) $\frac{6+6i}{-\sqrt{3}+i}$

$r =$ 3sqrt(2) , $\theta =$ tan^-1(2+sqrt(3))-pi ,

(c) $\frac{2i}{5e^{(6+i)}}$

$r =$ 2/(5*e^6) , $\theta =$ tan^-1(cos1/sin1) .

(1 point)

Re-write the following expressions with **i**:

$\sqrt{-15} =$ sqrt(15)i

(1 point) Write each of the given numbers in the polar form $re^{i\theta}$, $-\pi < \theta \leq \pi$.

(a) $\frac{1-i}{5}$

$r =$ sqrt(2)/5 , $\theta =$ tan^-1(-1) ,

(b) $-8\pi(2+i\sqrt{3})$

$r =$ 8sqrt(7)pi , $\theta =$ tan^-1(sqrt(3)/2)-pi ,

(c) $(1+i)^6$

$r =$ 8 , $\theta =$ -pi/2 .