

The fifth roots of -1 are exactly

Select the correct option



$\cos(\pm \pi/10)$, $\cos(\pm 3\pi/10)$, and -1



$\cos(\pm \pi/5)$, $\cos(\pm 3\pi/5)$, and -1



$\cos(\pi/5)$, $\cos(3\pi/5)$, $\cos((-3\pi)/5)$ and $\cos((- \pi)/5)$



none

The principal argument of $-5-5i$ is

► Select the correct option

☐	$-\frac{3\pi}{4}$
☒	$\frac{5\pi}{4}$
☐	$-\frac{5\pi}{4}$
☐	$\frac{3\pi}{4}$

Let $z = 3$, then $\arg(z) = \underline{\hspace{2cm}}$.

Select the correct option

☐	0 degree
☐	60 degree
☐	90 degree
☐	270 degree



$$(1 + i)^2 = \underline{\hspace{2cm}}$$

Select the correct option

☐	1+2i
☒	0+2i
☐	1+i
☐	1-2i

A set S is said to be _____ set if for every pair of points $z_1, z_2 \in S$ there is a curve C joining them which is entirely contained in S .

Select the correct option

[Reload Math Equation](#)

☐	bounded
☐	unbounded
☐	unconnected
☒	connected

Let $z = 1 + i$, then $\arg(z) = \underline{\hspace{2cm}}$.

Select the correct option

☐	$2\pi/4$
☐	$3\pi/4$
☐	$4\pi/4$
☒	$\pi/4$  

A complex power function is a function of the form _____, where

α

is a complex constant.

Select the correct option

☒	  $f(z) = z^\alpha$
☐	$f(z) = \alpha^z$
☐	$f(\alpha) = z^\alpha$
☐	$f(\alpha) = \alpha^z$

If $-8i = 8 \exp[i(-\pi/2 + 2k\pi)]$, then the root of

$$(-8i)^{1/3}$$

for $k=1$ is _____.

Select the correct option

☐	3i
☐	-3i
☐	2i
☐	-2i



The three cube roots of the number $-8i$ are

Select the correct option

☒



$$2 \exp \left[i \left(-\frac{\pi}{6} + \frac{2k\pi}{3} \right) \right], \quad k = 0, 1, 2$$

☐

$$2 \exp \left[i \left(-\frac{\pi}{6} + \frac{2k\pi}{3} \right) \right], \quad k = 0, 1$$

The principal argument of $-5-5i$ is

Select the correct option

☐	 $\frac{5\pi}{4}$
☐	 $-\frac{3\pi}{4}$
☐	$\frac{3\pi}{4}$
☐	$-\frac{5\pi}{4}$

If $f(z)=z^2$, then $f(x+iy)=$ _____.

Select the correct option

☒	$x^2 - y^2 + 2xyi$
☐	$x^2 + y^2 - 2xyi$
☐	$x^2 + y^2i - 2xyi$
☐	$x^2 - y^2i - 2xyi$

Polar form of the complex number $2-2i$ is

Select the correct option

☐	$2cis\left(\frac{\pi}{4}\right)$
☐	$2cis\left(-\frac{\pi}{4}\right)$
☐	 $2\sqrt{2}cis\left(-\frac{\pi}{4}\right)$
☐	none of these 

The complex number

$$(4i)^4$$

have _____ number of roots.

Select the correct option

☐	1
☐	2
☐	3
☐	4



The complex number

$$(4i)^4$$

have _____ number of roots.

Select the correct option

☐	1
☐	2
☐	3
☐	4



The square roots of $2i$ are

Select the correct option

☒



$$\sqrt{2} \left[i \left(\frac{\pi}{4} + \frac{2k\pi}{2} \right) \right], k \in \mathbb{Z}$$

☐

$$\sqrt{3} \left[i \left(\frac{\pi}{4} + \frac{2k\pi}{2} \right) \right], k \in \mathbb{Z}$$

If $-8i = 8 \exp[i (-n/2 + 2kn)]$, then the root of

root is not given in the question

for $k=0$ is _____.

Select the correct option

☐	$\sqrt{3} - i$
☐	$\sqrt{3} + i$
☐	$2(\sqrt{3} - i)$
☐	$2(\sqrt{3} + i)$

 correct

If $-8i = 8 \exp[i(-\pi/2 + 2k\pi)]$, then the root of

$$(-8i)^{1/3}$$

for $k=2$ is _____.

Select the correct option

☐	$\sqrt{3} - i$
☐	$\sqrt{3} + i$
☒	$-\sqrt{3} - i$
☐	$-\sqrt{3} + i$

A connected open set is called a _____.

Select the correct option

- | | |
|----------------------------------|---------------|
| ☒ | domain |
| ☐ | range |
| ☐ | closed set |
| ☐ | unbounded set |

A set S is said to be _____ set if for every pair of points $z_1, z_2 \in S$ there is a curve C joining them which is entirely contained in S .

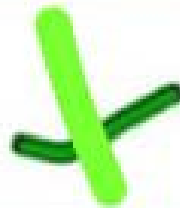
Select the correct option

 Reload Math Equation

☐	unbounded
☐	unconnected
☒	connected 
☐	bounded

If $z = -1+i$, then z expressed in polar form is

Select the correct option

☒		$2\text{cis}\left(-\frac{\pi}{4}\right)$
☐		$\text{cis}\left(-\frac{\pi}{4}\right)$
☐		$2\text{cis}\left(\frac{3\pi}{4}\right)$
☐		$\text{cis}\left(\frac{3\pi}{4}\right)$

The complex number

$$(4i)^4$$

have _____ number of roots

Select the correct option

☐	2
☐	1
☒	4
☐	3

In general, $1^{1/n}$ is

Select the correct option

☐

$$\exp\left(i\frac{2k\pi}{n}\right), k = 0, 1, \dots, n-1$$

S K H A N A C A D E M Y

☐

$$\exp\left(i\frac{2\pi}{n}\right)$$

if $-8i = 8 \exp[i(-\pi/2 + 2k\pi)]$, then the root of

$$(-8i)^{1/3}$$

for $k=0$ is

Select the correct option



$$2(\sqrt{3} + i)$$



$$\sqrt{3} - i$$



$$\sqrt{3} + i$$



$$2(\sqrt{3} - i)$$

The third roots of $2i$ is

select the correct option

Rebad Math

☐
$$\sqrt{3} \left[i \left(\frac{\pi}{6} + \frac{2k\pi}{3} \right) \right], k \in \mathbb{Z}$$

☐
$$\sqrt[3]{2} \left[i \left(\frac{\pi}{6} + \frac{2k\pi}{3} \right) \right], k \in \mathbb{Z}$$



Let $z = 1 + i$, then $\text{Arg}(z) = \text{-----}$.

Select the correct option

☐	$2\pi/4$
☒	$\pi/4$ 
☐	$3\pi/4$
☐	$4\pi/4$

Let $z = 7i$, then $\text{Arg}(z) = \text{-----}$.

Select the correct option

☐	$\frac{\pi}{3}$
☐	$\frac{\pi}{4}$
☒	$\frac{\pi}{2}$ 
☐	$\frac{\pi}{6}$

If $-8i = 8 \exp[i(-\pi/2 + 2k\pi)]$, then the root of

$$(-8i)^{1/3}$$

for $k=2$ is _____

Select the correct option

☒	$-\sqrt{3} - i$
☐	$-\sqrt{3} + i$
☐	$\sqrt{3} - i$
☐	$\sqrt{3} + i$

The complex number $-1-i$ has exponential form

Select the correct option



$$\sqrt{2} \left[i \left(-\frac{3\pi}{4} \right) \right]$$



$$\sqrt{2} \left[i \left(-\frac{3\pi}{2} \right) \right]$$

The three cube roots of the number $-8i$ are

Select the correct option



$$2 \exp \left[i \left(-\frac{\pi}{6} + \frac{2k\pi}{3} \right) \right], \quad k = 0, 1, 2$$

S K H A N A C A D E M Y



$$2 \exp \left[i \left(-\frac{\pi}{6} + \frac{2k\pi}{3} \right) \right], \quad k = 0, 1$$