

MTH403 GRAND QUIZ

MTH403:Grand Quiz

Quiz Start Time: 07:49 AM, 02 July 2020

Question # 1 of 30 (Start time: 07:49:56 AM, 02 July 2020)

Total Marks: 1

Where is the focus of the parabola whose equation is $y^2 = 20x$?

Select the correct option

[Reload Math Equations](#)

☐	(0, 20)
☒	(5, 0)
☐	(0, -5)
☐	(4, 0)

MTH403:Grand Quiz

Quiz Start Time: 07:49 AM, 02 July 2020

Question # 2 of 30 (Start time: 07:50:47 AM, 02 July 2020)

Total Marks: 1

The horizontal straight line i.e. x-axis is also termed as a/an _____ in polar coordinate system.

Select the correct option

[Reload Math Equations](#)

☐	vertical line
☐	initial line
☒	pole
☐	perpendicular line

Question # 3 of 30 (Start time: 07:50:55 AM, 02 July 2020)

Total Marks: 1

Rectangular coordinates of a point are $P(x, y) = (\sqrt{8}, \sqrt{8})$. If $P(r, \theta)$ are the polar coordinates of the same point, then

Select the correct option

 Reload Math Equations

☐	$\theta = \tan^{-1}8$
☐	$\theta = \tan^{-1}1$ 
☐	$\theta = \tan^{-1}(\sqrt{8})$
☐	$\theta = \tan^{-1}4$

Question # 4 of 30 (Start time: 07:51:03 AM, 02 July 2020)

Total Marks: 1

The conic is a parabola if e (eccentricity) is _____.

Select the correct option

 Reload Math Equations

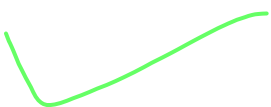
☐	equal to 1 
☐	less than 1
☐	greater than 1
☐	between 0 and 1

Question # 5 of 30 (Start time: 07:51:11 AM, 02 July 2020)

Total Marks: 1

The reflection of a complex number about real axis is called its conjugate

Select the correct option

☐	true	
☐	false	

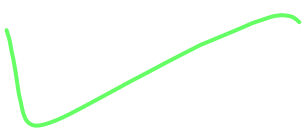
Question # 6 of 30 (Start time: 07:51:19 AM, 02 July 2020)

Total Marks: 1

The modulus of $z = -3 + 4i$ is

Select the correct option

[Reload Math Equations](#)

☐	$\sqrt{5}$	
☐	5	

Question # 7 of 30 (Start time: 07:51:26 AM, 02 July 2020)

Total Marks: 1

The conic is an ellipse if $h^2 - ab$ is _____.

Select the correct option

[Reload Math Equations](#)

☐	equal to 0
☐	less than 0
☐	greater than 0
☐	between 0 and 1

Question # 8 of 30 (Start time: 07:51:32 AM, 02 July 2020)

Total Marks: 1

Rectangular coordinates of a point are $P(x, y) = (6\sqrt{3}, 6)$. If $P(r, \theta)$ are the polar coordinates of the same point, then

Select the correct option

[Reload Math Equations](#)

☐	$r = 6\sqrt{3}$
☐	$r = 6$
☐	$r = 36\sqrt{3}$
☐	$r = 12$

$$\sqrt{(6\sqrt{3})^2 + (6)^2}$$

$$\sqrt{36 \cdot 3 + 36}$$

$$= 26$$

Question # 9 of 30 (Start time: 07:51:39 AM, 02 July 2020)

Total Marks: 1

De Moivre's theorem expresses powers of $\sin \theta$ in a series of

Select the correct option

[Reload Math Equations](#)

☐	sines
☐	cosines

Question # 10 of 30 (Start time: 07:51:52 AM, 02 July 2020)

Total Marks: 1

The hyperbola $x^2 - y^2 = 1$ is shifted two units left and five units up. What is the equation of this new hyperbola

Select the correct option

[Reload Math Equations](#)

☐	$(x - 1)^2 - (y + 5)^2 = 1$
☐	$(x + 1)^2 - (y - 5)^2 = 1$
☐	$(x - 1)^2 - (y - 5)^2 = 1$
☐	None of these

Question # 11 of 30 (Start time: 07:52:04 AM, 02 July 2020)

Total Marks: 1

For the ellipse $\frac{x^2}{4} + \frac{y^2}{1} = 1$, the sum of the distances d_1 and d_2 (from a point on ellipse to its foci) is equal to

Select the correct option

[Reload Math Equations](#)

☐	$d_1 + d_2 = 4$
☐	$d_1 + d_2 = 1$
☒	$d_1 + d_2 = 2$
☐	$d_1 + d_2 = 0$

Question # 12 of 30 (Start time: 07:52:09 AM, 02 July 2020)

Total Marks: 1

Using Euler's formula $e^{i\pi} =$

Select the correct option

[Reload Math Equations](#)

☐	1
☒	-1

1

Question # 13 of 30 (Start time: 07:52:13 AM, 02 July 2020)

Total Marks: 1

Length of diameter of a circle represented by the equation $8x^2 + 8y^2 - 8 = 0$ is

Select the correct option

 Reload Math Equations

☐	2	
☐	1	
☐	8	
☐	0	

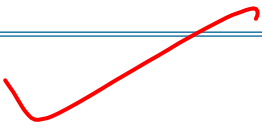
Question # 14 of 30 (Start time: 07:52:19 AM, 02 July 2020)

Total Marks: 1

For the ellipse $\frac{(x-3)^2}{9} + \frac{(y-2)^2}{4} = 1$, length of its minor axis is

Select the correct option

 Reload Math Equations

☐	9	
☐	4	
☐	6	
☐	8	

Question # 15 of 30 (Start time: 07:52:26 AM, 02 July 2020)

Total Marks: 1

For the parabola $y^2 = 4ax$, length of the latus rectum is equal to

Select the correct option

[Reload Math Equations](#)

☐	2a
☐	ax
☒	4a
☐	a

Question # 16 of 30 (Start time: 07:52:32 AM, 02 July 2020)

Total Marks: 1

If a point moves in a plane such that the difference between its distance from two fixed points is constant then then the path traced is ?

Select the correct option

[Reload Math Equations](#)

☒	Ellipse
☐	Parabola
☐	Hyperbola
☐	None of these

Question # 17 of 30 (Start time: 07:52:39 AM, 02 July 2020)

Total Marks: 1

Using Euler's formula $e^{-i\pi} =$

Select the correct option

 Reload Math Equations

☐	1
☐	-1



Question # 18 of 30 (Start time: 07:52:44 AM, 02 July 2020)

Total Marks: 1

4) The point where the parabola meets its axis is called the of the parabola

Select the correct option

☐	Vertex
☐	Focus
☐	Directrix
☐	Eccentricity



$$(\cos \theta - i \sin \theta)$$

$$(\cos \theta + i \sin \theta)$$

$$\cos^2 \theta - \sin^2 \theta$$

$\cos^2 + \sin^2 = 1$

Question # 19 of 30 (Start time: 07:52:51 AM, 02 July 2020)

Total Marks: 1

Let $x = \cos \theta - i \sin \theta$, then $x \frac{1}{x} =$

Select the correct option

 Reload Math Equations

☐	1
☐	-1

Question # 20 of 30 (Start time: 07:52:57 AM, 02 July 2020)

Total Marks: 1

In the conic section, if the eccentricity e of the conic is greater than 1, then it will be a

Select the correct option

☐	Parabola
☒	Hyperbola
☐	Circle
☐	Ellipse

Question # 21 of 30 (Start time: 07:53:03 AM, 02 July 2020)

Total Marks: 1

If $P = (x, y)$ and $P(r, \theta)$ are the rectangular and polar coordinates respectively, then which of the following equations(s) hold(s)?

Select the correct option

[Reload Math Equations](#)

☐	(a) $x = r \cos \theta$ and $y = r \sin \theta$
☐	(b) $r^2 = x^2 + y^2$
☐	(c) $\tan \theta = \frac{y}{x}$
☒	(d) All (a) to (c)

Question # 22 of 30 (Start time: 07:53:09 AM, 02 July 2020)

Total Marks: 1

For $z = 1 + i$, $z^{-1} =$

Select the correct option

[Reload Math Equations](#)

☒	$\frac{1}{2}(1 - i)$
☐	$\frac{1}{\sqrt{2}}(1 - i)$

$$e^{i \ln i} = e^{i \ln(i)}$$

$$= e^{i \ln(i)}$$

$$= e^{i \ln(i)}$$

e^{ib}
 e^{-i}

MIT403:Grand Quiz

Quiz Start Time: 07:49 AM, 02 July 2020

Question # 23 of 30 (Start time: 07:53:15 AM, 02 July 2020)

Total Marks: 1

$$1^i = \dots\dots$$

Select the correct option

 Reload Math Equations

☐	0
☐	1
☐	e
☐	-1

✓

MIT403:Grand Quiz

Quiz Start Time: 07:49 AM, 02 July 2020

Question # 24 of 30 (Start time: 07:53:21 AM, 02 July 2020)

Total Marks: 1

The value of principal argument lies within the range

Select the correct option

 Reload Math Equations

☐	$-2\pi < \theta < 2\pi$
☐	$-\pi < \theta < \pi$

✓

Question # 25 of 30 (Start time: 07:53:27 AM, 02 July 2020)

Total Marks: 1

If $z = \bar{z}$ then z is a

Select the correct option

[Reload Math Equations](#)

☒	pure real number
☐	pure imaginary number

Question # 26 of 30 (Start time: 07:53:33 AM, 02 July 2020)

Total Marks: 1

$\sinh 0$
= ___?

Select the correct option

[Reload Math Equations](#)

☐	1
☐	2
☐	-1
☒	0

Question # 27 of 30 (Start time: 07:53:40 AM, 02 July 2020)

Total Marks: 1

The four fourth roots of unity form a square on joining on an argand diagram.

Select the correct option

☒	true
☐	false

Question # 28 of 30 (Start time: 07:53:46 AM, 02 July 2020)

Total Marks: 1

Which equation describes a parabola?

Select the correct option

[Reload Math Equations](#)

☒	$-2y^2 + 10x + 9y = -11$
☐	$-4x^2 + 10x - 4y^2 - 2y + 9 = 0$
☐	$-8x^2 + 10y + 3y^2 - 4x - 2 = 0$
☐	$-3x^2 + 9x + 5y^2 + 2y = 2$

Question # 29 of 30 (Start time: 07:53:53 AM, 02 July 2020)

Total Marks: 1

what is the centre of given ellipse $\frac{(x-3)^2}{16} + \frac{(y+5)^2}{49} = 1$

Select the correct option

[Reload Math Equations](#)

☐	(4, 7)
☐	(3, -5)
☐	(-3, 5)
☐	(3, 5)

Question # 30 of 30 (Start time: 07:53:58 AM, 02 July 2020)

Total Marks: 1

The equation of hyperbola centered at origin with vertices $(\pm 3, 0)$ and co vertices $(0, \pm 2)$ is

Select the correct option

[Reload Math Equations](#)

☐	$\frac{x^2}{9} + \frac{y^2}{4} = 1$
☐	$\frac{x^2}{3} - \frac{y^2}{2} = 1$
☐	$\frac{x^2}{9} - \frac{y^2}{4} = 1$
☐	$\frac{x^2}{-} + \frac{y^2}{-} = 1$