

# XT - MATHS Grade 10

Name: \_\_\_\_\_

Class: \_\_\_\_\_

Subject: Analytical Geometry

Date: \_\_\_\_\_

Total Marks: 49

## Question 1: True/False [1]

Mathematics - LO 3 : AS 3

The equation of the straight line parallel to the  $x$ -axis and passing through the point  $(-2; 4)$  is  $x = -2$ .

TRUE

FALSE

Question 2 refers to the following graphic

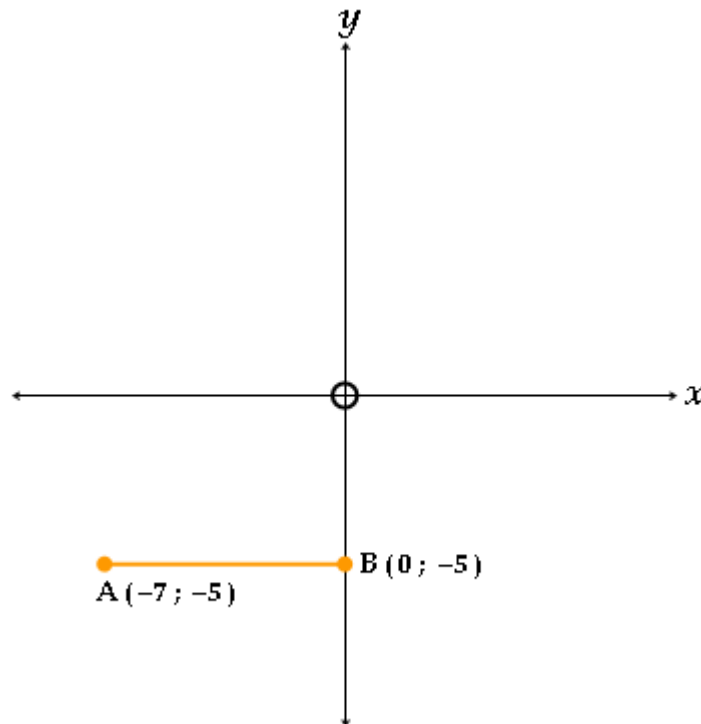


Figure 1: AG0003

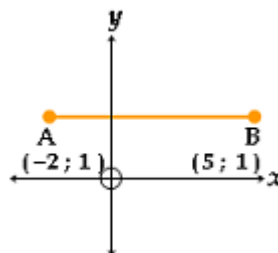
## Question 2: Multiple Choice [2]

Mathematics - LO 3 : AS 4

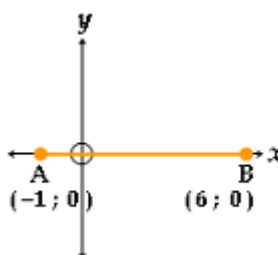
AB in the given graph is translated 5 units to the right and 6 units up.

Which one of the following sketches shows the correct new position of AB?

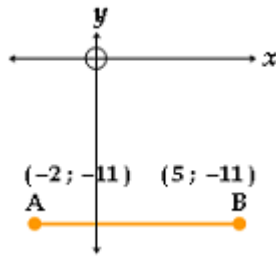
A



B



C



Question 3 refers to the following graphic

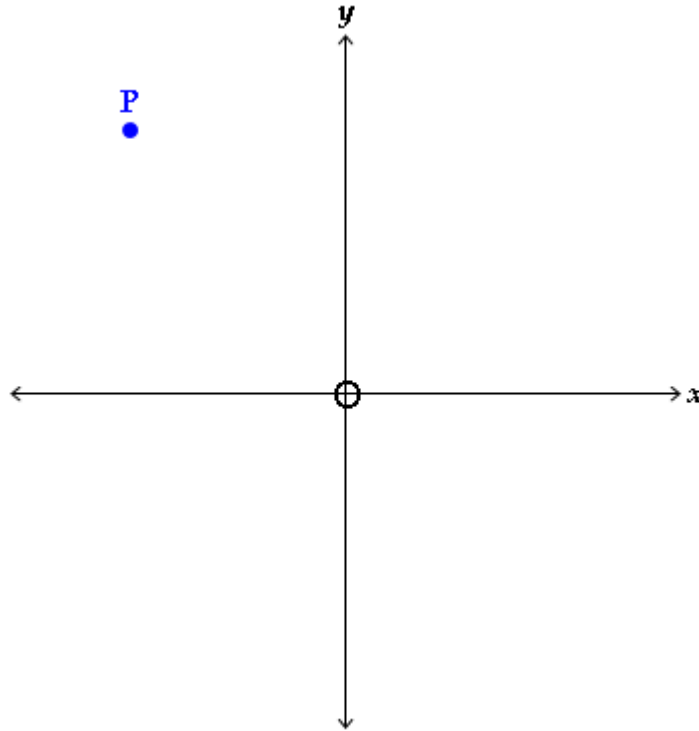


Figure 2: AG0005

**Question 3: Socrates [1]**

Mathematics - LO 3 : AS 4

When point P in this sketch is reflected about the  $y$ -axis, it will lie in the ... quadrant.

Question 4 refers to the following graphic

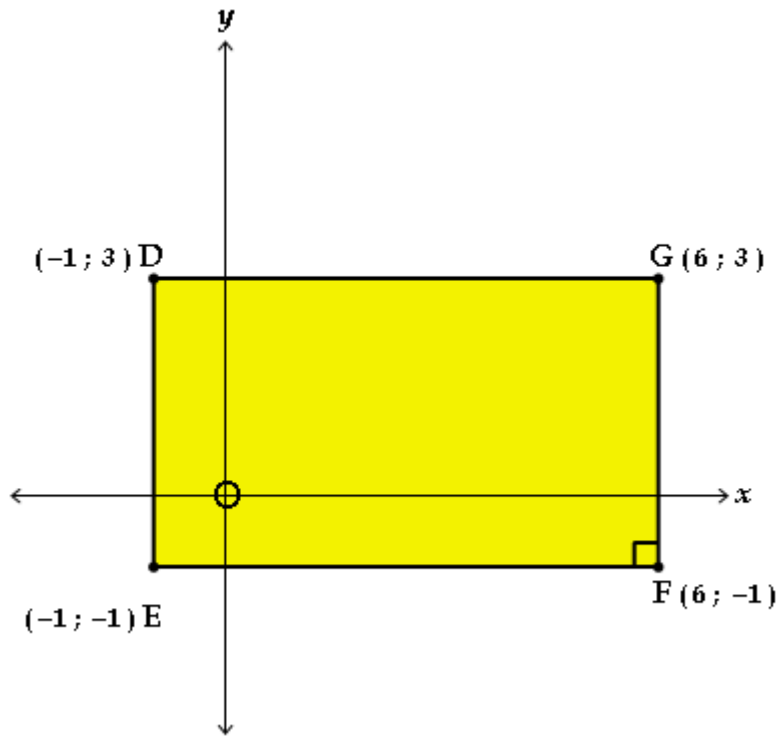


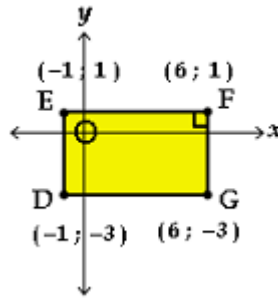
Figure 3: AG0004

**Question 4: Multiple Choice [4]**

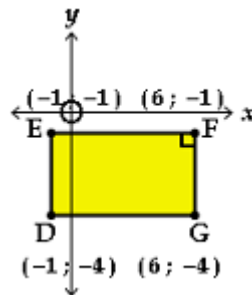
Mathematics - LO 3 : AS 4

DEFG is a rectangle with vertices as given on the sketch. This rectangle is reflected about the  $x$ -axis. Which one of the following sketches shows the image of DEFG?

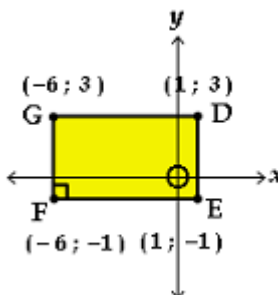
**A**



**B**



**C**



**Question 5: True/False [4]**

The vertices of parallelogram ABCD are A(7; -5), B(2; 3), C(-2; -3) and D(3; -11).

If M is the point of intersection of the diagonals of ABCD, then the coordinates of M will be  $(2\frac{1}{2}; -4)$ .

TRUE	FALSE
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Question 6 refers to the following graphic

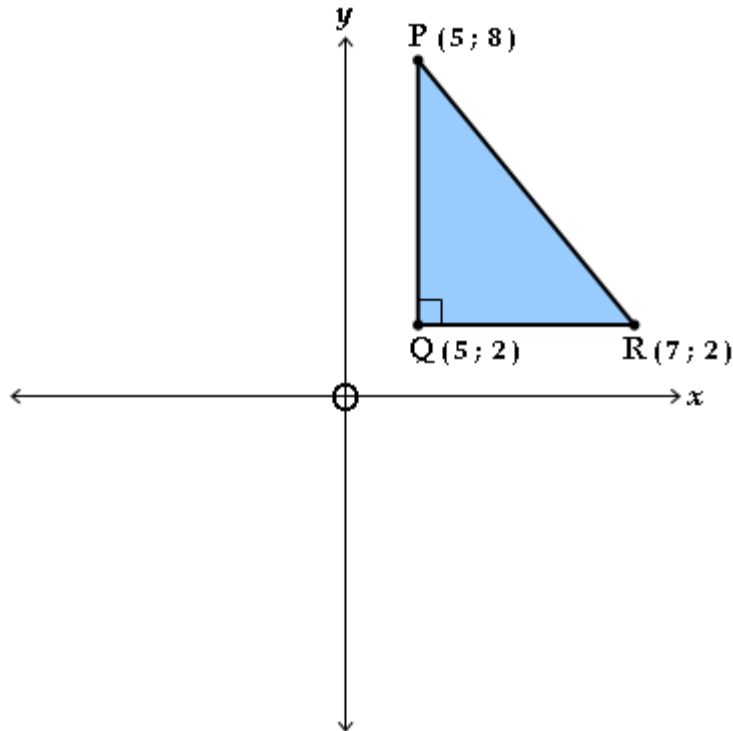


Figure 4: AG0007

**Question 6: Cloze [6]**

In the given sketch, PQR is a right-angled triangle with vertices P(5; 8), Q(5; 2) and R(7; 2) given.

If this triangle is reflected about the line PQ, the new coordinates of R will be (Ans. 1).

If the original triangle is reflected about the y-axis, the new coordinates of R will be (Ans. 2).

If the original triangle is reflected about the x-axis, the new coordinates of R will be (Ans. 3).

1	
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2	
---	--

3	
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▶(3; 2)

▶(-3; 2)

▶(-7; 2)

▶(7; 2)

▶(-7; -2)

▶(7; -2)

Question 7 refers to the following graphic

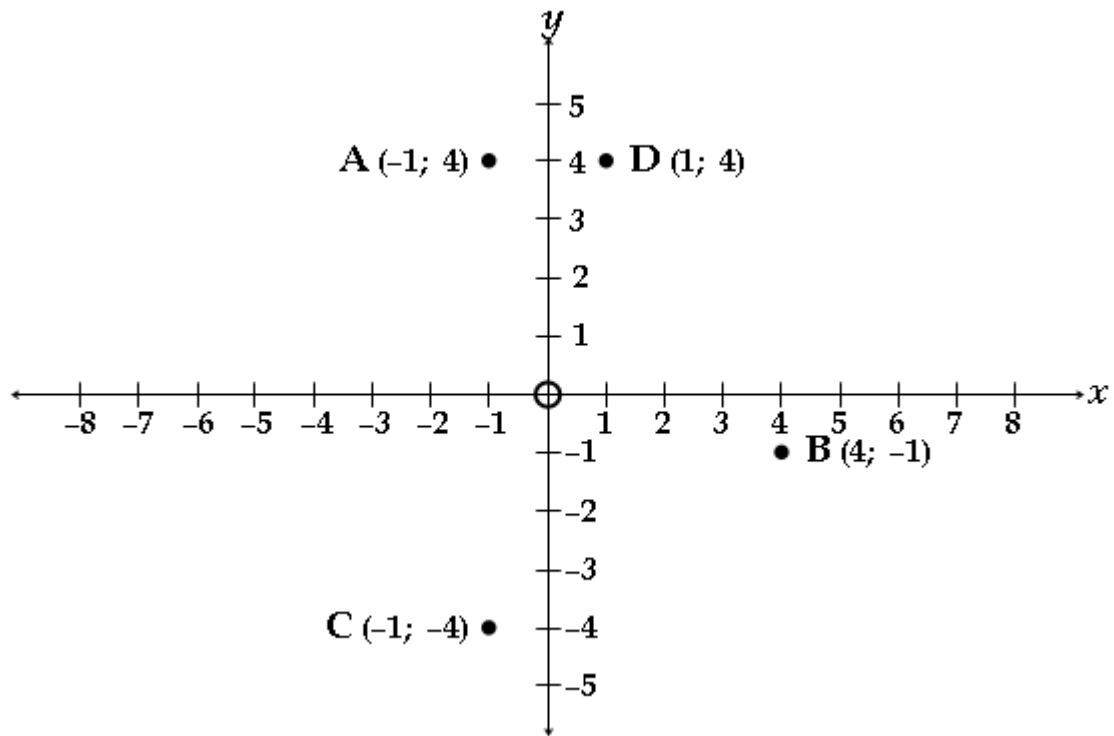


Figure 5: 10-0008

**Question 7: Cloze [3]**

Mathematics - LO 3 : AS 4

In the given sketch, the point A (-1; 4) has been transformed in three different ways.

The point B is the image of A by the transformation (Ans. 1).

The point C is the image of A by the transformation (Ans. 2).

The point D is the image of A by the transformation (Ans. 3).

1	
---	--

2	
---	--

3	
---	--

- ▶ reflection about the  $y$ -axis
- ▶ reflection about the  $x$ -axis
- ▶ reflection about the line  $y = x$
- ▶ rotation  $90^\circ$  clockwise about the origin
- ▶ rotation  $90^\circ$  anticlockwise about the origin
- ▶ rotation  $180^\circ$  about the origin
- ▶ translation four units vertically down
- ▶ translation six units horizontally to the right

**Question 8: Cloze [2]**

Mathematics - LO 3 : AS 3

In the equation  $y = mx + c$ , the gradient is represented by the value of (Ans. 1) and the  $y$ -intercept is represented by the value of (Ans. 2).

1	
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2	
---	--

- ▶  $y$
- ▶  $m$
- ▶  $x$
- ▶  $c$

**Question 9: Socrates [6]**

Mathematics - LO 3 : AS 3

If the distance from  $(x; -3)$  to the origin is 5 units, then  $x$  will be equal to ...

[If there is more than one value, use a semi-colon to separate the numbers, e.g. 6 ; 2]

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**Question 10: Socrates [3]**

Mathematics - LO 3 : AS 3

A straight line passes through the point ( 2 ; -3 ) and has a slope of 4.  
The equation of this straight line will be ...

[Give the equation in standard form.]

**Question 11: Multiple Choice [2]**

Mathematics - LO 3 : AS 3

The intercepts of  $x = 7y - 24$  with the axes is given by ...

**A**  $x = 1; y = 7$

**B**  $x = -24; y = 3\frac{3}{7}$

**C**  $x = -24; y = -24$

**D**  $x = \frac{1}{7}; y = \frac{7}{24}$

**Question 12: Multiple Choice [3]**

Mathematics - LO 3 : AS 3

If P and Q are the points ( -2 ; 3 ) and ( 5 ; 1 ) respectively, then the distance between P and Q is equal to ...

**A**  $\sqrt{13}$

**B**  $\sqrt{25} = 5$

**C**  $\sqrt{45}$

**D**  $\sqrt{53}$

**Question 13: Socrates [5]**

Mathematics - LO 3 : AS 3

A ( -1 ; 9 ), B ( 2 ; -3 ) and C ( 8 ; b ) are points in the Cartesian plane.  
If these three points are collinear, then the value of b will be equal to ...

[Give the number only.]

**Question 14: Cloze [3]**

Mathematics - LO 3 : AS 4

The point A (3; -2) is to be transformed in three different ways.

The point B (3; 2) is the image of A by the transformation (Ans. 1).

The point C (-3; -2) is the image of A by the transformation (Ans. 2).

The point D (-2; 3) is the image of A by the transformation (Ans. 3).

1	
---	--

2	
---	--

3	
---	--

▶ reflection about the  $y$ -axis

▶ reflection about the  $x$ -axis

▶ reflection about the line  $y = x$

▶ rotation about the  $y$ -axis

▶ rotation about the  $x$ -axis

▶ rotation about the origin

▶ translation four units vertically down

▶ translation six units horizontally to the right

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**Question 15: Socrates [4]**

Mathematics - LO 3 : AS 3

If  $A (-4 ; 2)$  and  $B (6 ; 4)$  are two points on a straight line, then the coordinates of  $T (x ; y)$  which divide  $AB$  in the ratio  $1 : 1$  are ...

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15 Questions, 7 Pages