GIRLS' HIGH SCHOOL AND COLLEGE, PRAYAGRAJ
ASSIGNMENT-1
SESSION 2020-2021
CLASS X(A, B,C, D,E,F)
SUBJECT-MATHEMATICS

Topic: Co-ordinate Geometry

Chapter: Reflection

INSTRUCTIONS: The Parents to ensure that their ward watches the video instructions for this assignment by clicking on the given link:

https://youtu.be/HWASzeP4pSA

She should revise the lesson given in the book and then work on the assignment. The completed assignment is to be downloaded and

filed/pasted in the subject file / copy and kept ready for submission.

The day, date and procedure of submission shall be notified later.

Reference Book:- Concise Mathematics Class X – By R. K. Bansal

SOLVE THE FOLLOWING QUESTIONS:

Ques1-The point A(4,6) is first reflected in the origin to point A'. Point A' is then reflected in the y-axis to point A''. (i)Write down the co-ordinates of A''.(ii)Write down a single transformation that maps A onto A''.

Ques2-P and Q have co-ordinate (-4,3) and (6,4) respectively. Reflect P in the x-axis to P' and Q in the y-axis to Q' .State the co-ordinates of P' and Q'.

Ques3- Point A(4, -1) is reflected as A' in the y-axis .Point B on reflection in the x-axis is mapped as B'(-2,5).Write the co-ordinates of A' and B.

Ques4-(i) Plot the points A(3,5) and B(-2, -4).Use 1cm= 1unit on both the axes.

(ii) A' is the image of A when reflected in the x-axis .Write down the co-ordinates of A' and plot it on the graph paper.

(iii)B' is the image of B when reflected in the y-axis, followed by reflection in the origin.Write down the co-ordinates of B'and plot it on the graph paper.

(iv)Write down the geometrical name of the figure AA'BB'.

(v)Name two invariant points under reflection in the x-axis.

Ques5-(a)The point P(2, -4) is reflected about the line x=0 to get the image Q. Find the co-ordinates of Q.

(b)The point Q is reflected about the line y=0 to get the image R .Find the co-ordinates of R.

(c)Name the figure PQR.

(d)Find the area of figure PQR.

Ques6-Using a graph paper ,plot the points A(6,4) and B(0,4).

(a)Reflect A and B in the origin to get the images A' and B'.

(b)Write the co-ordinates of A' and B'.

(c)State the geometrical name for the figure ABA'B'.

Ques7-Use graph paper for this question .

(Take 2cm = 1 unit along both x-axis and y-axis.)

Plot the points O(0,0), A(-4,4), B(-3,0) and C(0,-3)

(i)Reflect points A and B on the y-axis and name them A' and B' respectively. Write down their co-ordinates . (ii)Name the figure OABCB'A'.

Ques8-Use a graph paper for this question:

(Take 2cm=1 unit on both x and y axes)

(i)Plot the following points :

A(0,4), B(2,3), C(1,1) and D(2,0).

(ii)Reflect points B, C, D on the y-axis and write down their coordinates .Name the images as B',C', D' respectively.

(iii)Join the points A, B, C, D, D', C', B' and A in order ,so as to form a closed figure.

Ques9-(i) Point P(a,b) is reflected in the x-axis to P' (5, -2).Write down the values of a and b.

(ii)P'' is the image of P when reflected in the y-axis .Write down the co-ordinates of P''.

(iii)Name a single transformation that maps P' to P''.

Ques10-A point P(-2 , 3) is reflected in line x=2 to point P'. Find the co-ordinates of P'.

Ques11- A point P is reflected in the origin.Co-ordinates of its image are (-2,7).

(i)Find the co-ordinate of P.

(ii)Find the co-ordinates of the image P under reflection in the x-axis.

Ques12-The point P(a,b) is first reflected in the origin and then reflected in the y-axis to P'.If P' has co-ordinates (4,6); evaluate a and b.

Ques13-The point P(x,y) is first reflected in the x-axis and then reflected in the origin to P'.If P' has co-ordinates (-8,5); evaluate x and y.

Ques14-The point A(-3,2) is reflected in the x-axis to the point A'. Point A' is then reflected in the origin to point A''.

(i)Write down the co-ordinates of A''

(ii)Write down a single transformation that maps A onto A''.

Ques15-The triangle ABC, where A is (2,6), B is (-3,5) and C is (4,7), is reflected in the y-axis to triangle A'B'C' .Triangle A'B'C' is then reflected in the origin to triangle A''B''C''.

(i)Write down the co-ordinates of A'',B'' and C''.

(ii)Write down a single transformation that maps triangle ABC onto triangle A''B''C''.

Ques16-On a graph paper , plot the triangle ABC, whose vertices are at the points A(3,1), B(5,0) and C(7,4).

On the same diagram, draw the image of the triangle ABC under reflection in the originO (0,0).

Ques17-The point (-5,0) on reflection in a line is mapped as (5,0) and the point (-2,-6) on reflection in the same line is mapped as (2,-6).

(i)Name the line of reflection.

(ii)Write the co-ordinates of the image of (5,-8) in the line obtained in (i)

Ques18- Points (3,0) and (-1,0) are invariant points under reflection in the L_1;

points (0,-3) and (0,1) are invariant points on reflection in line L_2.

(i)Write down the images of points P(3,4) and Q(-5,-2) on reflection in

L_1.Name the images as P' and Q' respectively.

(ii)Write down the images of P and Q on reflection in L_2.Name the images

P'' and Q'' respectively.

(iii)State or describe a single transformation that maps P' onto P''.

Ques19- (a)Plot A(3,2) and B(5,4) on graph paper.

Take 2cm= 1 unit on both the axes.

(b)Reflect A and B in the x-axis to A' and B' respectively. Plot these points

also on the same graph paper.

(c)Write down:

(i)the geometrical name of the figure ABB'A';

(ii)the image A'' of A, when A is reflected in the origin .

(iii)the single transformation that maps A' to A''.

Ques20- Points A and B have co-ordinates (3,4) and (0,2) respectively .Find the image:

(a)A' of A under reflection in the x-axis.

(b)B' of B under reflection in the line AA'.

(c)A'' of A under reflection in the y-axis.

(d)B'' of B under reflection in the line AA''.

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