

GIRLS' HIGH SCHOOL & COLLEGE, PRAYAGRAJ

ASSIGNMENT- 03

SESSION: 2020-21

CLASS: X(A,B,C,D,E,F)

SUBJECT: MATHEMATICS

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

PART(I): <https://youtu.be/b83Kby-1gJk>

PART(II): <https://youtu.be/WzFELI3r30s>

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.

PART(I)

CHAPTER: EQUATION OF A LINE

SOLVE THE FOLLOWING QUESTIONS:

Ques1- In ΔABC , $A = (3, 5)$, $B = (7, 8)$ and $C = (1, -10)$. Find the equation of the median through A.

Ques2- Find the equation of the line whose slope is $-\frac{5}{6}$ and x- intercept is 6.

Ques3- Find the equation of the straight line passing through origin and the point of intersection of the lines $x + 2y = 7$ and $x - y = 4$.

Ques4- The lines represented by $4x + 3y = 9$ and $px - 6y + 3 = 0$ are parallel. Find the value of p.

Ques5-Find the equation of the line passing through (-2 , 1) and perpendicular to $4x + 5y = 6$.

PART (II)

CHAPTER: TRIGONOMETRICAL IDENTITIES

PROVE THE FOLLOWING IDENTITIES:

Ques1- $\frac{1}{\sec A + \tan A} = \sec A - \tan A$

Ques2- $\sec^2 A \cdot \operatorname{cosec}^2 A = \tan^2 A + \cot^2 A + 2$

Ques3- $\frac{1}{1 + \cos A} + \frac{1}{1 - \cos A} = 2 \operatorname{cosec}^2 A$

Ques4- $\frac{1 + \sin A}{\cos A} + \frac{\cos A}{1 + \sin A} = 2 \sec A$

Ques5- $\frac{\sin \theta \tan \theta}{1 - \cos \theta} = 1 + \sec \theta$

CHAPTER: HEIGHTS AND DISTANCES

SOLVE THE FOLLOWING QUESTIONS

Ques1-A boy, 1.6 m tall, is 20 m away from a tower and observes the angle of elevation of the top of the tower to be (i) 45° (ii) 60° . Find the height of the tower in each case.

Ques2- Find the height of a tree when it is found that on walking away from it 20m, in a horizontal line through its base, the elevation of its top changes from 60° to 30° .

Ques3- From the top of a cliff, 60 metres high, the angles of depression of the top and bottom of a tower are observed to be 30° and 60° . Find the height of the tower.

Ques4-The horizontal distance between two towers is 75 m and the angular depression of the top of the first tower as seen from the top of the second, which is 160 m high, is 45° . Find the height of the first tower.

Ques5- From the top of a hill, the angles of depression of two consecutive kilometre stones, due east, are found to be 30° and 45° respectively. Find the distances of the two stones from the foot of the hill.

NOTE: Refer to your book and do the following questions in your mathematics notebook/register.

Page no.	Exercise no	Question no.
197	Ex 14(c)	8,20
201	Ex 14(d)	11,20
325	Ex 21(A)	34,44
343	Ex 22(c)	19,20

THE END