**General Equation of second Degree:** .

**Condition of General Equation Second Degree to Represent a Pair Straight Lines:**

If  represent a pair of straight lines then

.

The **intersection** points of the lines is

.

If  be the **angle** between the straight lines then

.

Also if (i) the straight lines are **perpendicular** to each other then 

(ii) The straight lines are **parallel** then .

**Distance** between those straight lines is  .

The **equation of bisector** of angle between the straight lines represent by the equation is



If  represent a pair of straight lines and  be the intersection point. Then the **equation of bisectors** of angle between the straight lines represent by the equation

 .

**Example-1.** Show thattheequation represents a pair of straight lines. Also find their inter section point and angle.

**Solution:**

Given equation 

Compare with the general equation of second degree . We get



Now



Thus equation (1) represents a pair of straight lines.

The intersection point



Angle between them

 

**Example-2.** Show thattheequation represents two perpendicular of straight lines.

**Example-3.** Show thattheequation represents two perpendicular straight lines and also find their equation.

**Exercises-1.** Show thatthefollowings equation represents a pair of straight lines. Also find their inter section point and angle.



**Exercises-2.** Find the value of  so thatthefollowings equation represents a pair of straight lines.



