



## MATHS

## **BOOKS - MAHAVEER PUBLICATION**

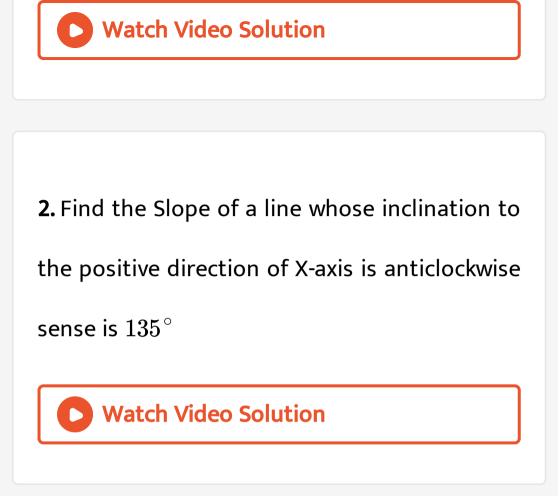
# **STRAIGHT LINE**

**Question Bank** 

1. Find the Slope of a line whose inclination to

the positive direction of X-axis is anticlockwise

sense is  $45^\circ$ 

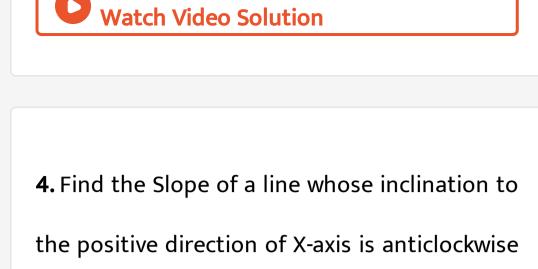


3. Find the Slope of a line whose inclination to

the positive direction of X-axis is anticlockwise

sense is  $120^\circ$ 





sense is  $\frac{3\pi}{4}$ 

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5. Find the Slope of a line whose inclination to

the positive direction of X-axis is anticlockwise

sense is  $-\frac{\pi}{4}$ 

6. What can be said about a straight line if its

slope is positive ?

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7. What can be said about a straight line if its

slope is negative ?

8. What can be said about a straight line if its

slope is zero?

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**9.** Find the slope of the line passing through (3,-2) and (1,4)

10. Find the slope of the line passing through

(3,2) and (4,5)

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**11.** Find the slope of the line passing through (7,2) and (7,-5)

12. Find the equation of the lines parallel to

axes and passing through (-3,4).

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**13.** Find the equation of the line cutting off an intercept of length 2 from the negative direction of the axis of y and making an angle of  $120^{\circ}$  with the positive direction of X-axis.



14. Every first degree equation in x, yrepresents a straight line.Watch Video Solution

15. Find the equation of the line which passes

through the point (-4,3) with slope 1/2

16. Find the equation of the line which passes

through (-1,1) and (2,-4).

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**17.** Find the equation of the line, which makes intercepts 4 and -5 on the X-axis and Y-axis respectively.

**18.** Find the equation of the line whose perpendicular distance from the origin is 5 units and the angle made by the perpendicular with the positive X-axis is  $30^{\circ}$ 

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**19.** Find the angle between the lines 7x-y = 1

and 6x-y = 11

**20.** If the angle between two lines is  $\frac{\pi}{4}$  and slopes of one of the lines is 1/2, find the slope of the other line.



**21.** Find the equation of a straight line, which passes through the point (1,2) and which is parallel to the straight line 2x+3y+6=0

**22.** Find the equation of a line which is perpendicular to the line 4x+5y+2=0 and passing through the point (-2,4)

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**23.** Find the perpendicular distance from the

point (2,3) from 2x+3y+4=0

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**24.** Find the points on the X-axis whose perpendicular distance from the line x/a+y/b=1 is a



### 25. Find the distance between the parallel

lines 3x-4y+7=0 and 3x-4y+5=0



26. Find the equation of the line passing

through (-2,-3) and

parallel to x-axis



## 27. Find the equation of the line passing

through (-2,-3) and

parallel to y-axis

**28.** Find the slope of a line which makes an angle of

 $45^{\,\circ}$  with the positive direction of Y-axis.

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**29.** Find the slope of a line which makes an angle of

 $45\,^\circ$  with the negative direction of X-axis.

30. Find the slope of a line joining the points

(2,-3) and (3,4)



31. Find the slope and y-intercept of the line

whose equation is 3x-6y=12.

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**32.** Determine x so that the slope of the line through the points (2,5) and (7, x) is 3.



**33.** Find the slope of a line, which passes through the origin and mid-point of the segment joining the points P(0,-4) and B(8,0).



34. Find the angle between the X-axis and the

line joining the points (3,-1)and(4,2).



35. If three points (h,0),(a,b)and(0,k)lie on a

line, show that a/h+b/k=1

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**36.** Find the equation of the line passing through (3,-5) and perpendicular to the line through the points (2,5) and (-3,6)

**37.** Find the equation of the line passing through (0,2) making an angle  $\frac{2\pi}{3}$  with the positive X-axis. Also find the equation of the line parallel to it and crossing the Y-axis at a distance of two units below the origin.

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**38.** Convert the following equation into intercept forms and perpendicular (normal)forms.

$$x - \sqrt{3}y + 8 = 0$$



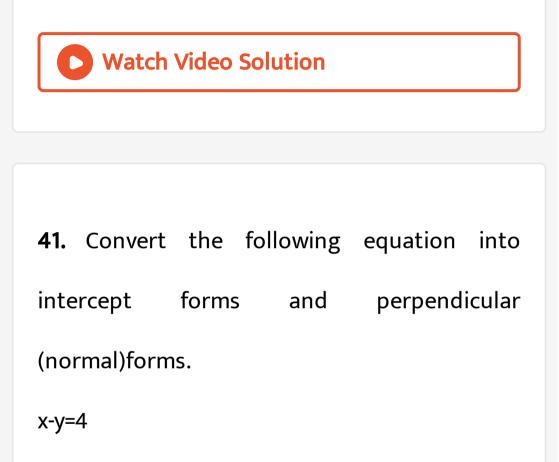
**39.** Convert the following equation into intercept forms and perpendicular (normal)forms.

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**40.** Convert the following equation into intercept forms and perpendicular

(normal)forms.

3x-4y+10=0



42. Find the distance of the point (-1,1) from

the line 12(x+6)=5(y-2)

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**43.** Find the points on the X-axis, whose

distances from the line x/3+y/4=1 are 4 units.

**44.** Find the equation of a line which passes through the point (3,1) and bisects the portion of the line 3x+4y=12 intercepted between coordinate axes.

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45. Find the distances between parallel lines

2x+y-5=0 and 2x+y+2=0

46. Find the distances between parallel lines

l(x+y)+p=0 and l(x+y)-r=0



**47.** Find the equation of the straight line which passes through the point (-1,0) and is parallel to the straight line y=2x+3.



**48.** Find the equation of the straight line which passes through the point (0,3) and is perpendicular to the straight line x+y+1=0



**49.** Find the equation of the the line which has x-intercept -8 and is perpendicular to the line x+4y-17=0.



**50.** Find the equation of the line whose yintercept is 2 and is parallel to the line x-3y+7=0

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**51.** Prove that the equation of a straight line passing through  $(a \cos^2 \theta, a \sin^2 \theta)$  and perpendicular to the line  $x \sec \theta + y \cos ec\theta = a$  is

 $x\cos heta-y\sin heta=a\cos2 heta$ 

**52.** Find the points on the axis of Y whose perpendicular distance from the straight line 4x+3y=12 is 4

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**53.** Find the angle between the lines 4x+y=3

and x/2+y=4/7

**54.** Find the equation of a line which passes through the point (3,2) and cuts off positive intercepts on X and Y axes in the ratio of 4:3.



55. If p is the length of perpendicular from the

origin to the line whose intercepts on the axes

are a and b, then show that  $rac{1}{p^2}=rac{1}{a^2}+rac{1}{b^2}.$