NCERT MATHS SOLUTIONS

Class - 11 || STRAIGHT LINES

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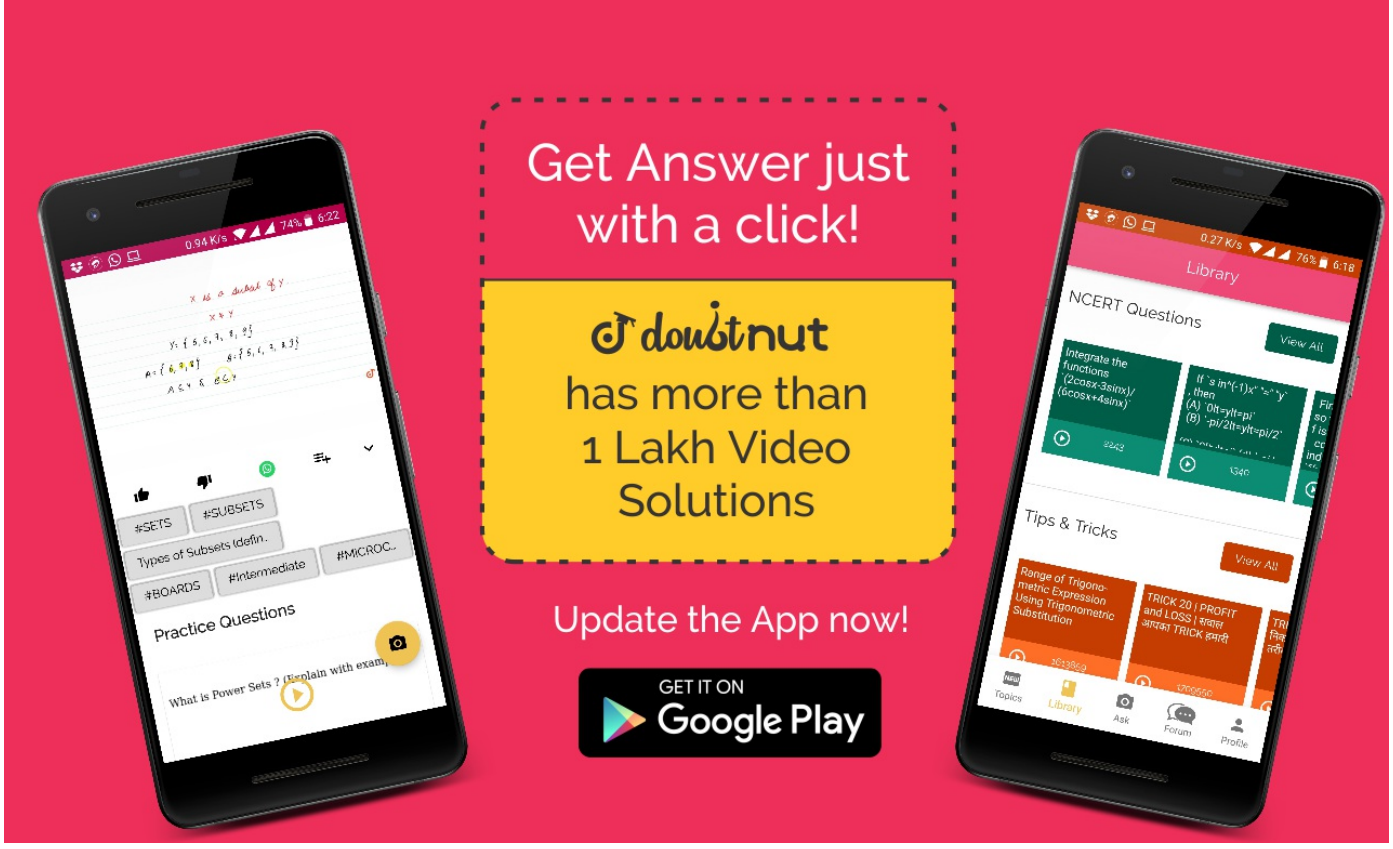
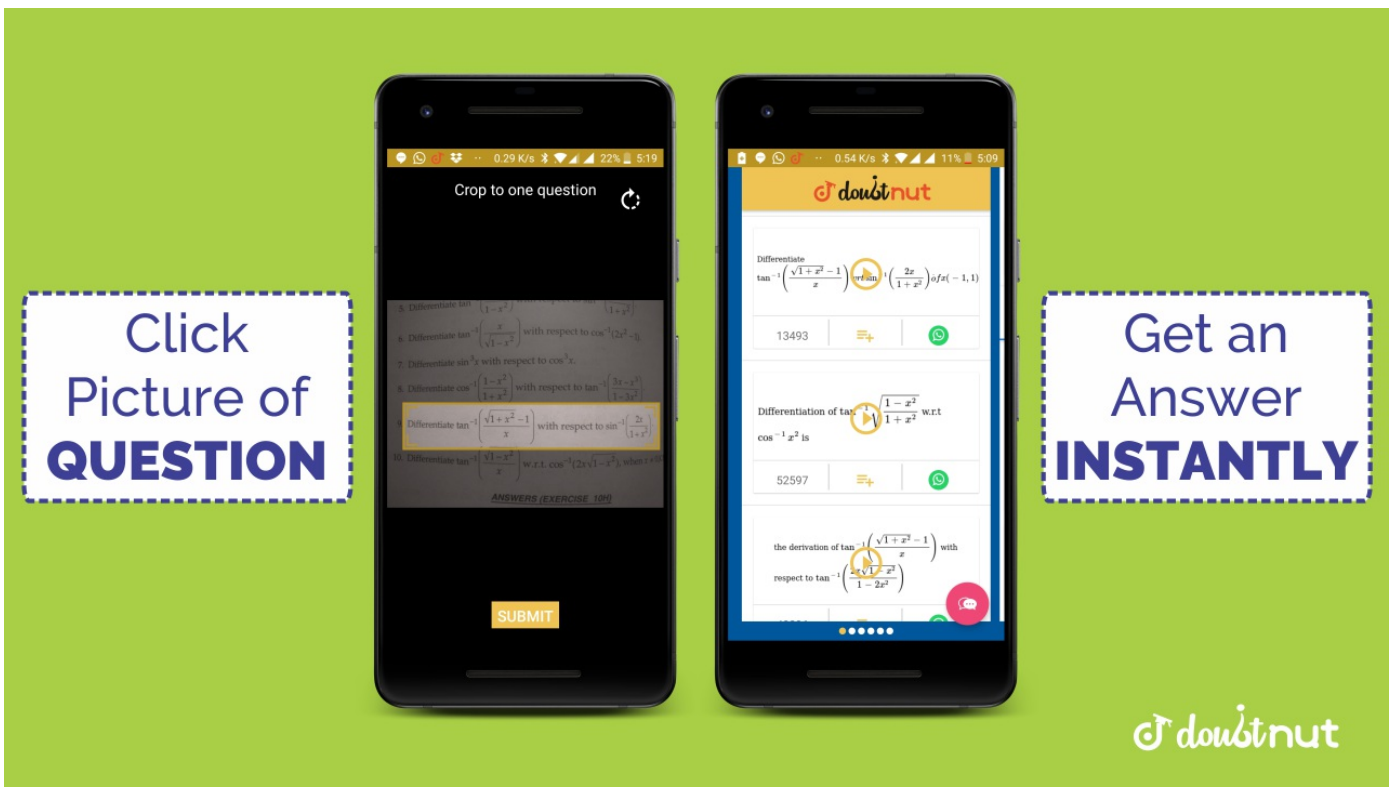
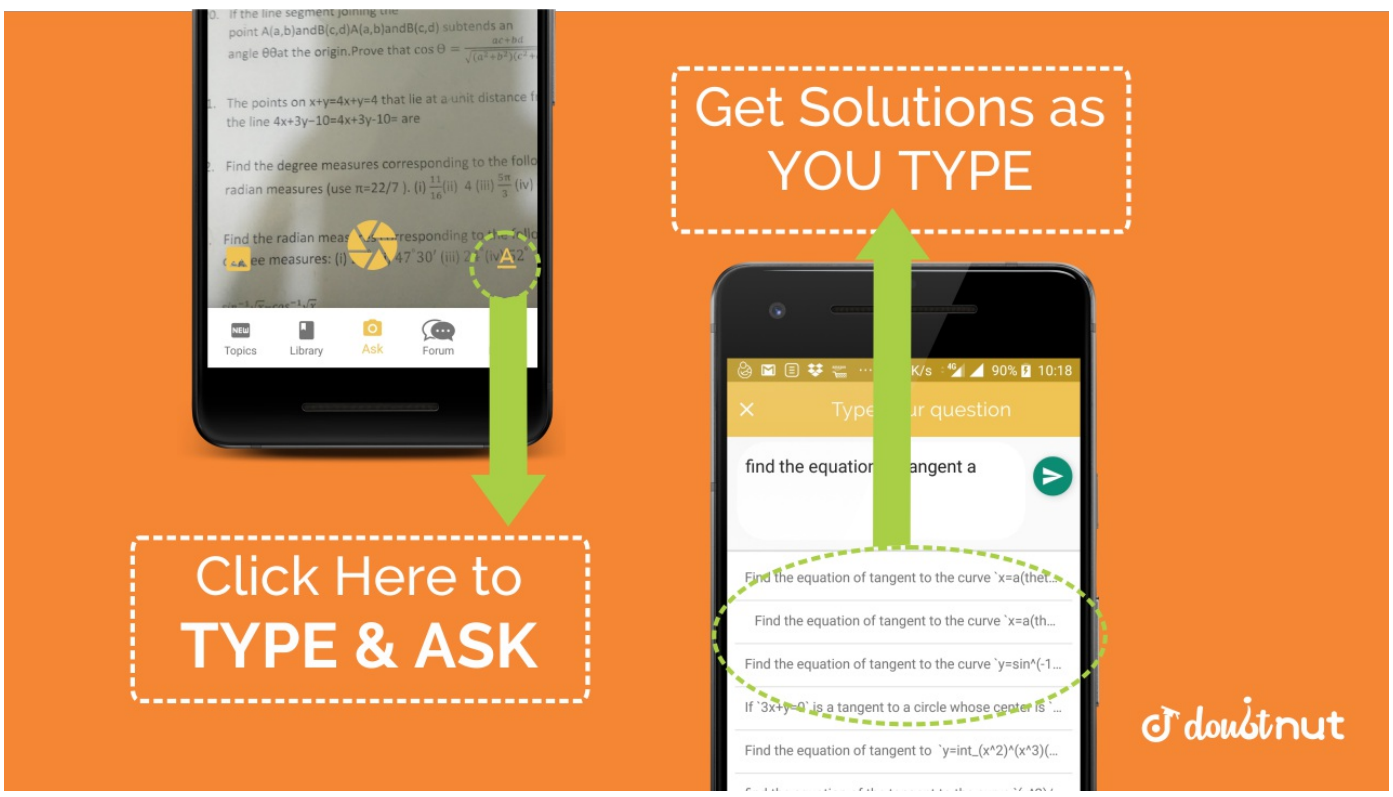
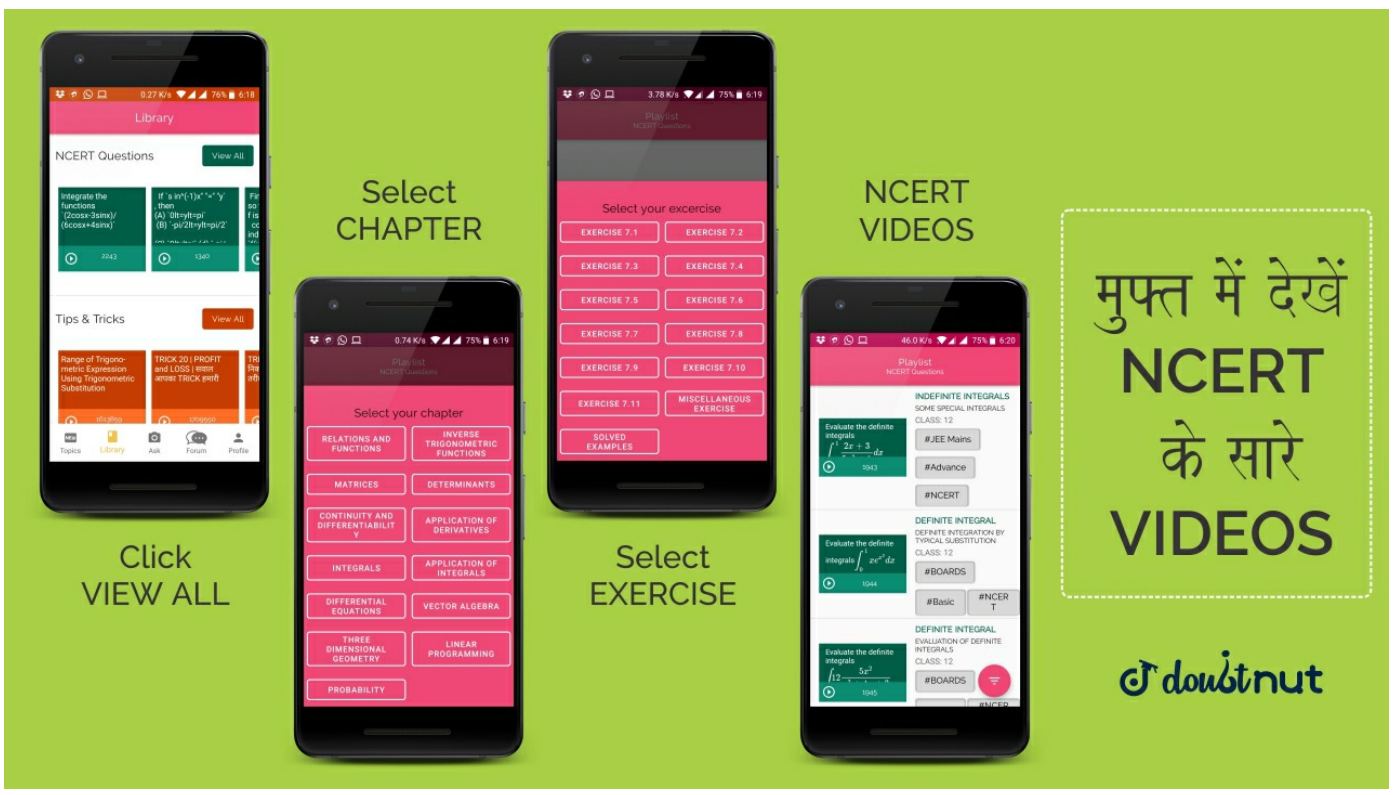
Ques No.	Question
1	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.1 - Q 1** Draw a quadrilateral in the Cartesian plane, whose vertices are $(4, 5)$, $(0, 7)$, $(5, 5)$ and $(4, 2)$. Also, find its area. Watch Free Video Solution on Doubtnut
2	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.1 - Q 2** The base of an equilateral triangle with side 2a lies along the y–axis such that the mid–point of the base is at the origin. Find vertices of the triangle. Watch Free Video Solution on Doubtnut
3	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.1 - Q 3** Find the distance between $P(x_1, y_1)$ and $Q(x_2, y_2)$ when: (i) PQ is parallel to the yaxis, (ii) PQ is parallel to the xaxis. Watch Free Video Solution on Doubtnut
4	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.1 - Q 4** Find a point on the x–axis, which is equidistant from the points (7, 6) and (3, 4). Watch Free Video Solution on Doubtnut
5	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.1 - Q 5** Find the slope of a line, which passes through the origin, and the midpoint of the line segment joining the points $P \quad (0, \quad 4)$ and $B \quad (8, \quad 0)$. Watch Free Video Solution on Doubtnut



6	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.1 - Q 6** Without using the Pythagoras theorem, show that the points $(4, \quad 4)$, $(3, \quad 5)$ and $(1, \quad 1)$ are the vertices of a right angled triangle. Watch Free Video Solution on Doubtnut
7	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.1 - Q 7** Find the slope of the line, which makes an angle of 30° with the positive direction of yaxis measured anticlockwise. Watch Free Video Solution on Doubtnut
8	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.1 - Q 8** Find the value of x for which the points $(x, \quad 1)$, $(2, \quad 1)$ and $(4, \quad 5)$ are collinear. Watch Free Video Solution on Doubtnut
9	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.1 - Q 9** Without using distance formula, show that points $(2, \quad 1)$, $(4, \quad 0)$, $(3, \quad 3)$ and $(3, \quad 2)$ are the vertices of a parallelogram. Watch Free Video Solution on Doubtnut
10	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.1 - Q 10** Find the angle between the horizontal axis and the line joining the points $(3, \quad -1)$ and $(4, \quad -2)$. Watch Free Video Solution on Doubtnut

11	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.1 - Q 11** The slope of a line is double of the slope of another line. If tangent of the angle between them is $\frac{1}{3}$, find the slopes of the lines. Watch Free Video Solution on Doubtnut
doubtnut पढ़ना हुआ आसान	
12	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.1 - Q 12** A line passes through (x_1, y_1) and $(h, \quad k)$. If slope of the line is m, show that $k - y_1 = m(h - x_1)$. Watch Free Video Solution on Doubtnut
13	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.1 - Q 13** If three points (h, 0), (a, b) and (o, k) lie on a line, show that $\frac{a}{h} + \frac{b}{k} = 1$. Watch Free Video Solution on Doubtnut
14	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.1 - Q 14** Consider the following population and year graph, find the slope of the line AB and using it, find what will be the population in the year 2010? Watch Free Video Solution on Doubtnut
15	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 1** Write the equations for the x–and y–axes. Watch Free Video Solution on Doubtnut
	NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 2

16	Find the equation of the line which satisfy the given conditions : Passing through the point $\left(\quad -4, \quad 3 \right)$ with slope $\frac{1}{2}$. Watch Free Video Solution on Doubtnut
17	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 3** Find the equation of the line which satisfy the given conditions : Passing through (0, 0) with slope m. Watch Free Video Solution on Doubtnut
	
18	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 4** Find the equation of the line which satisfy the given conditions : Passing through $\left(2, 2\sqrt{3}\right)$ and inclined with the xaxis at an angle of 75° . Watch Free Video Solution on Doubtnut
19	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 5** Find the equation of the line which satisfy the given conditions : Intersecting the xaxis at a distance of 3 units to the left of origin with slope 2 . Watch Free Video Solution on Doubtnut

20	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 6** Find the equation of the line which satisfy the given conditions : Intersecting the yaxis at a distance of 2 units above the origin and making an angle of 30° with positive direction of the xaxis. Watch Free Video Solution on Doubtnut
21	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 7** Find the equation of the line which satisfy the given conditions : Passing through the point $(\quad 1, \quad 1)$ and $(2, \quad 4)$ Watch Free Video Solution on Doubtnut
22	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 8** Find the equation of the line which satisfy the given conditions : Perpendicular distance from the origin is 5 units and the angle made by the perpendicular with the positive xaxis is 30° . Watch Free Video Solution on Doubtnut
23	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 9** The vertices of Δ PQR are $P \quad (2, \quad 1)$, $Q \quad (2, \quad 3)$ and $R \quad (4, \quad 5)$. Find equation of the median through the vertex R. Watch Free Video Solution on Doubtnut
doubtnut पढ़ना हुआ आसान	
24	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 10** Find the equation of the line passing through $(3, -\ 5)$ and perpendicular to the line through the points $(2, -\ 5)$ and $(3, -\ 6)$. Watch Free Video Solution on Doubtnut

25	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 11** A line perpendicular to the line segment joining the points (1, 0) and (2, 3) divides it in the ratio $1 \quad : \quad n$. Find the equation of the line. Watch Free Video Solution on Doubtnut
26	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 12** Find the equation of a line that cuts off equal intercepts on the coordinate axes and passes through the point (2, 3). Watch Free Video Solution on Doubtnut
27	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 13** Find equation of the line passing through the point (2, 2) and cutting off intercepts on the axes whose sum is 9. Watch Free Video Solution on Doubtnut
28	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 14** Find equation of the line through the point (0, 2) making an angle $\frac{2\pi}{3}$ with the positive xaxis. Also, find the equation of line parallel to it and crossing the xaxis at a distance of 2 units below the origin. Watch Free Video Solution on Doubtnut
29	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 15** The perpendicular from the origin to a line meets it at the point $(2, \quad 9)$, find the equation of the line. Watch Free Video Solution on Doubtnut

30	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 16** The length L (in centimetre) of a copper rod is a linear function of its Celsius temperature C. In an experiment, if $L = 124.942$ when $C = 20$ and $L = 125.134$ when $C = 110$, express L in terms of C. Watch Free Video Solution on Doubtnut
31	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 17** The owner of a milk store finds that, he can sell 980 litres of milk each week at Rs 14/litre and 1220 litres of milk each week at Rs 16 / litre. Assuming a linear relationship between selling price and demand, how many litres could he sell weekly at Rs 17 / litre? Watch Free Video Solution on Doubtnut
32	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 18** P (a, b) is the midpoint of a line segment between axes. Show that equation of the line is $\frac{x}{a} + \frac{y}{b} = 2$. Watch Free Video Solution on Doubtnut
33	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 19** Point R (h, k) divides a line segment between the axes m the ratio $1: 2$. Find equation of the line. Watch Free Video Solution on Doubtnut
34	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.2 - Q 20** By using the concept of equation of a line, prove that the three points $(3, 0)$, $(-2, -2)$ and $(8, 2)$ are collinear. Watch Free Video Solution on Doubtnut
35	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 1** Reduce the following equations into slope intercept form and find their slopes and the y intercepts. (i) $x + 7y = 0$, (ii) $6x + 3y - 5 = 0$, (iii) $y = 0$. Watch Free Video Solution on Doubtnut

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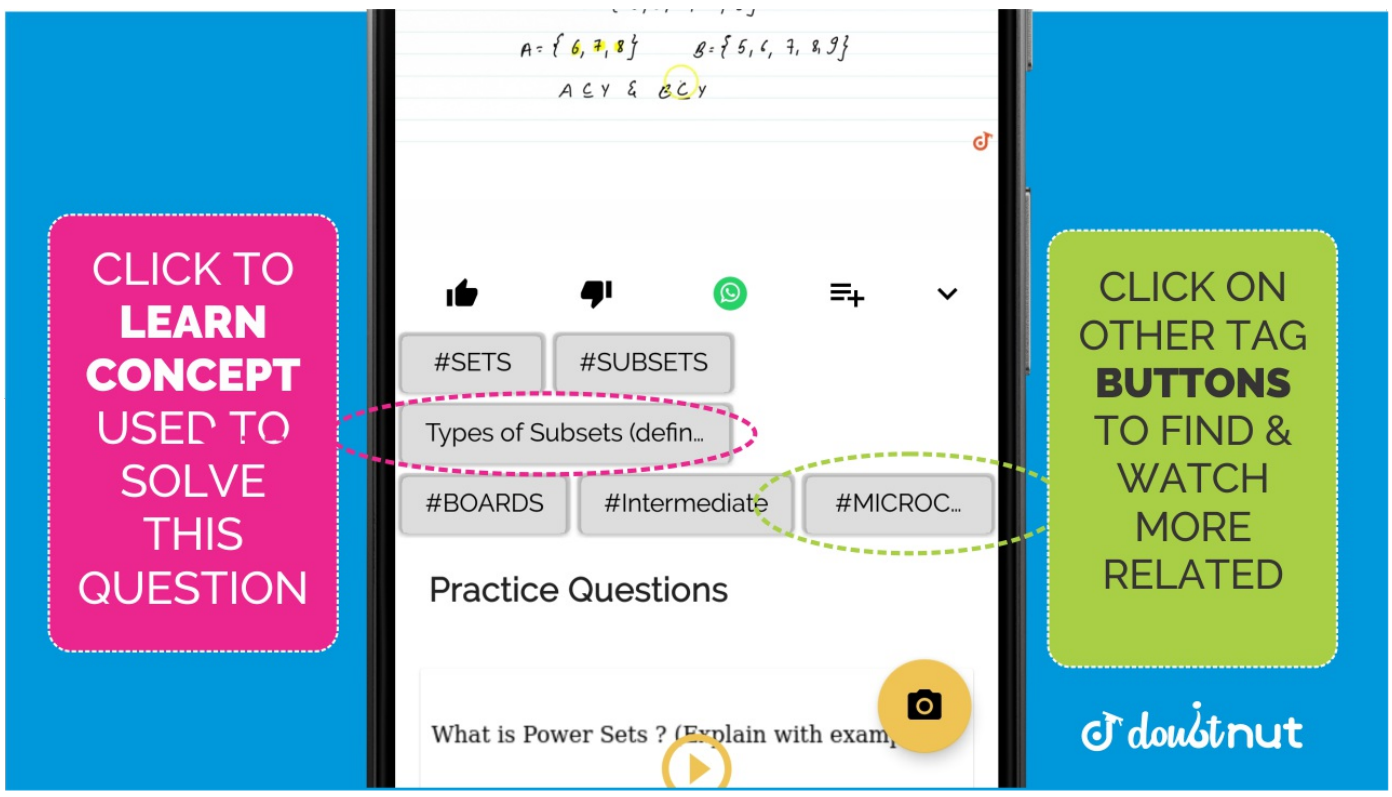
36	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 2** Reduce the following equations into intercept form and find their intercepts on the axes. (i) $3x + 2y - 12 = 0$, (ii) $4x - 3y = 6$, (iii) $3y + 2 = 0$. Watch Free Video Solution on Doubtnut
37	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 3** Reduce the following equations into normal form. Find their perpendicular distances from the origin and angle between perpendicular and the positive xaxis. (i) $x - \sqrt{3}y + 8 = 0$, (ii) $y - 2 = 0$, (iii) $x - y = 4$. Watch Free Video Solution on Doubtnut
38	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 4** Find the distance of the point $(1, -1)$ from the line $12(x + 6) = 5(y - 2)$. Watch Free Video Solution on Doubtnut
39	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 5** Find the points of the xaxis, whose distances from the line $\frac{x}{3} + \frac{y}{4} = 1$ are 4 unit is. Watch Free Video Solution on Doubtnut
	NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 6

40	Find the distance between parallel lines (i) $15x + 8y + 34 = 0$ and $15x + 8y + 31 = 0$ (ii) $l(x + y) + p = 0$ $l(x+y)-r = 0$. Watch Free Video Solution on Doubtnut
41	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 7** Find equation of the line parallel to the line $3x - 4y + 2 = 0$ and passing through the point $(2, 3)$. Watch Free Video Solution on Doubtnut
	
42	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 8** Find equation of the line perpendicular to the line $x - 7y + 5 = 0$ and having x intercept 3. Watch Free Video Solution on Doubtnut
43	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 9** Find angles between the lines $\sqrt{3}x + y = 1$ and $x + \sqrt{3}y = 1$. Watch Free Video Solution on Doubtnut

44	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 10** The line through the points (h, 3) and (4, 1) intersects the line $7x - 9y - 19 = 0$ at right angle. Find the value of h. Watch Free Video Solution on Doubtnut
45	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 11** Prow that the line through the point (x_1, y_1) and parallel to the line $Ax + By + C = 0$ is $A(x - x_1)$ $+ B(y - y_1) = 0$. Watch Free Video Solution on Doubtnut
46	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 12** Two lines passing through the point (2, 3) intersects each other at an angle of $60o$. If slope of one line is 2, find equation of the other line. Watch Free Video Solution on Doubtnut
47	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 13** Find the equation of the right bisector of the line segment joining the points (3, 4) and (–1, 2). Watch Free Video Solution on Doubtnut
	
	NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 14

48	Find the coordinates of the foot of perpendicular from the point $(1, \quad 3)$ to the line $3x \quad 4y \quad 16 = \quad 0$. Watch Free Video Solution on Doubtnut
49	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 15** The perpendicular from the origin to the line $y = mx + c$ meets it at the point $(1, \quad 2)$. Find the values of m and c. Watch Free Video Solution on Doubtnut
50	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 16** If p and q are the lengths of perpendiculars from the origin to the lines $x\cos\theta - y\sin\theta = k\cos 2\theta$ and $x\sec\theta + y\mathrm{c\,o\,s\,e\,c}\theta = k$, respectively, prove that $p^2 + 4q^2 = k^2$. Watch Free Video Solution on Doubtnut
51	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 17** In the triangle ABC with vertices A (2, 3), B (4, –1) and C (1, 2), find the equation and length of altitude from the vertex A. Watch Free Video Solution on Doubtnut
52	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.3 - Q 18** 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 $\frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$. Watch Free Video Solution on Doubtnut
53	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.4 - Q 1** Find the equation of the line through the intersection of lines $3x + 4y = 7$ and $x - y + 2 = 0$ and whose slope is 5. Watch Free Video Solution on Doubtnut

54	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.4 - Q 2** Find the equation of the line through the intersection of lines $x + \ \ 2y\ \ 3\ \ = \ \ 0$ and $4xy + \ \ 7\ \ = 0$ and which is parallel to $5x + \ \ 4y20\ \ = \ \ 0$ Watch Free Video Solution on Doubtnut
55	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.4 - Q 3** Find the equation of the line through the intersection of the lines $2x + \ \ 3y\ \ 4\ \ = \ \ 0$ and $x\text{-}\ \ 5y = \ \ 7$ that has its x-intercept equal to $\ \ 4$. Watch Free Video Solution on Doubtnut
56	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.4 - Q 4** Find the equation of the line through the intersection of $5x\text{-}3y = 1$ and $2x\text{-}3y\text{-}23 = 0$ and perpendicular to the line $5x\text{-}\ \ 3y\text{-}1 = 0$. Watch Free Video Solution on Doubtnut
57	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.5 - Q 1** Find the new coordinates of the points in each of the following cases if the origin is shifted to the point (–3, –2) by a translation of axes. (i) (1, 1) (ii) (0, 1) (iii) (5, 0) (iv) (–1, –2) (v) (3, –5) Watch Free Video Solution on Doubtnut

58	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - EXERCISE 10.5 - Q 2** Find what the following equations become when the origin is shifted to the point (1, 1) (i) $x^2 + xy - 3y^2 - y + 2 = 0$ (ii) $xy - y^2 - x + y = 0$ (iii) $xy - x - y + 1 = 0$ Watch Free Video Solution on Doubtnut
59	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 1** Find the values of k for which the line $(k-3)x - \left(4-k^2\right) y + k^2 - 7k + 6 = 0$ is (a) Parallel to the xaxis, (b) Parallel to the y axis, (c) Passing through the origin. Watch Free Video Solution on Doubtnut

60	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 2** Find the values of θ and p, if the equation $x\cos\theta - y\sin\theta = p$ is the normal form of the line $\sqrt{3}x + y + 2 = 0$.

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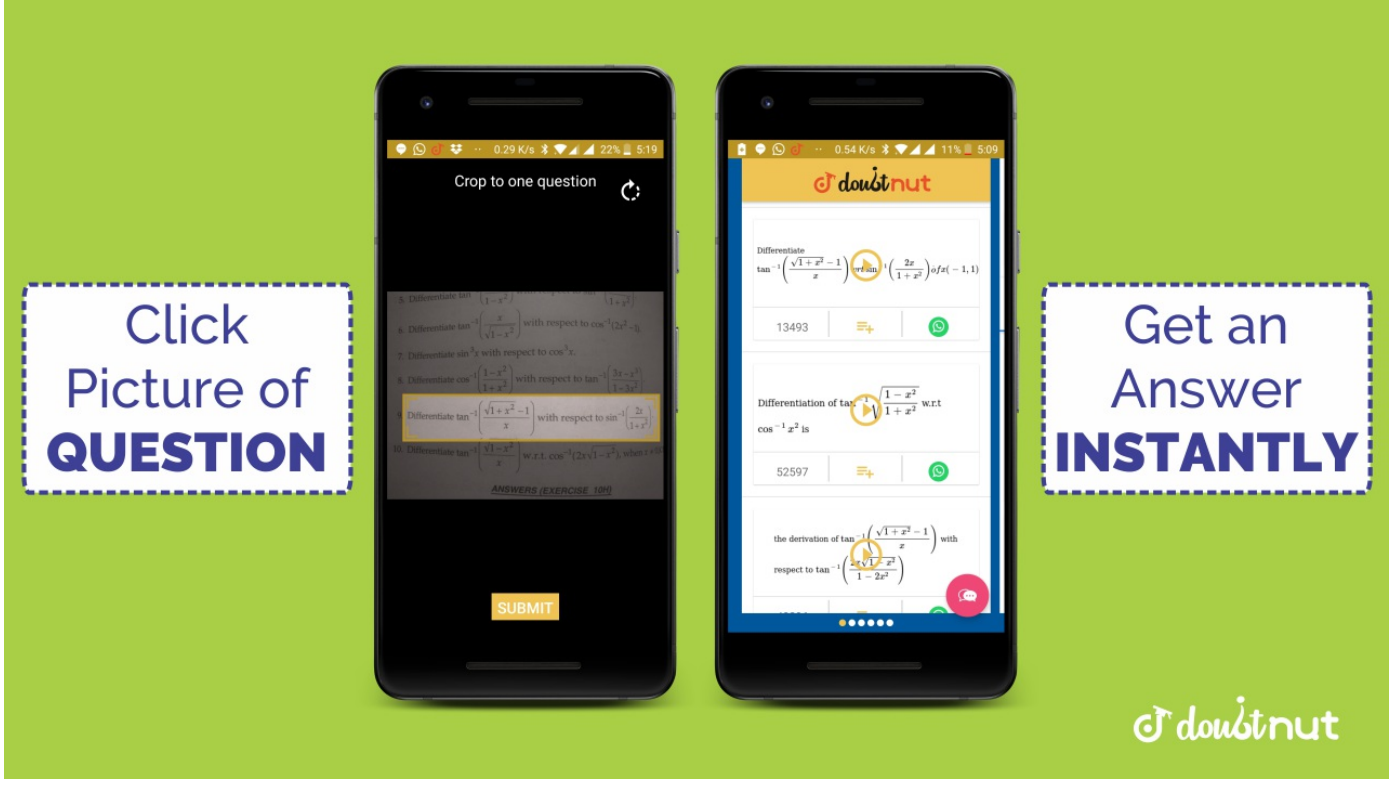
61	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 3** Find the equations of the lines, which cutoff intercepts on the axes whose sum and product are 1 and 6 , respectively. Watch Free Video Solution on Doubtnut
62	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 4** What are the points on the yaxis whose distance from the line $\frac{x}{3}+\frac{y}{4}=1$ is 4 units. Watch Free Video Solution on Doubtnut
63	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 5** Find perpendicular distance from the origin of the line joining the points $(\cos\theta,\ \sin\theta)$ and $(\cos\varphi,\ \sin\varphi)$. Watch Free Video Solution on Doubtnut
64	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 6** Find the equation of the line parallel to yaxis and drawn through the point of intersection of the lines $x-7y+5=0$ and $3x+y=0$. Watch Free Video Solution on Doubtnut
65	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 7** Find the equation of a line drawn perpendicular to the line $\frac{x}{4}+\frac{y}{6}=1$ through the point, where it meets the yaxis Watch Free Video Solution on Doubtnut



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NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 8

Find the area of the triangle formed by the lines $y - x = 0, x + y = 0$ and $x - k = 0$.

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NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 9

Find the value of p so that the three lines $3x + y - 2 = 0$, $px + 2y - 3 = 0$ and $2x - y - 3 = 0$ may intersect at one point.

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NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 10

If three lines whose equations are $y = m_1x + c_1, y = m_2x + c_2$ and $y = m_3x + c_3$ are concurrent, then show that $m_1(c_2 - c_3) + m_2(c_3 - c_1) + m_3(c_1 - c_2) = 0$.

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69	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 11** Find the equation of the lines through the point (3, 2) which make an angle of $45o$ with the line $x - 2y = 3$. Watch Free Video Solution on Doubtnut
70	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 12** Find the equation of the line passing through the point of intersection of the lines $4x + 7y - 3 = 0$ and $2x - 3y + 1 = 0$ that has equal intercepts on the axes. Watch Free Video Solution on Doubtnut
71	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 13** Show that the equation of the passing through the origin and making an angle θ with the $y = mx + c$ is $\frac{y}{x} =$ $\pm \frac{m + \tan\theta}{1 - m\tan\theta}$. Watch Free Video Solution on Doubtnut
72	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 14** In what ratio, the line joining $(1, \quad 1)$ and $(5, \quad 7)$ is divided by the line $x + y = 4$? Watch Free Video Solution on Doubtnut
	NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS

73	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 15** Find the distance of the line $4x + 7y + 5 = 0$ from the point $(1, 2)$ along the line $2x - y = 0$. Watch Free Video Solution on Doubtnut
74	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 16** Find the direction in which a straight line must be drawn through the point $(1, \quad 2)$ so that its point of intersection with the line $x \quad + \quad y \quad 4$ may be at a distance of 3 units from this point. Watch Free Video Solution on Doubtnut
75	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 17** The hypotenuse of a right angled triangle has its ends at the points $(1, 3)$ and $(4, 1)$. Find the equation of the legs (perpendicular sides) of the triangle. Watch Free Video Solution on Doubtnut
76	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 18** Find the image of the point $(3, \quad 8)$ with respect to the line $x \quad + \quad 3y$ $= \quad 7$ assuming the line to be a plane mirror. Watch Free Video Solution on Doubtnut
77	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 19** If the lines $y = 3x + 1$ and $2y = x + 3$ are equally inclined to the line$y = mx + 4$, find the value of m. Watch Free Video Solution on Doubtnut
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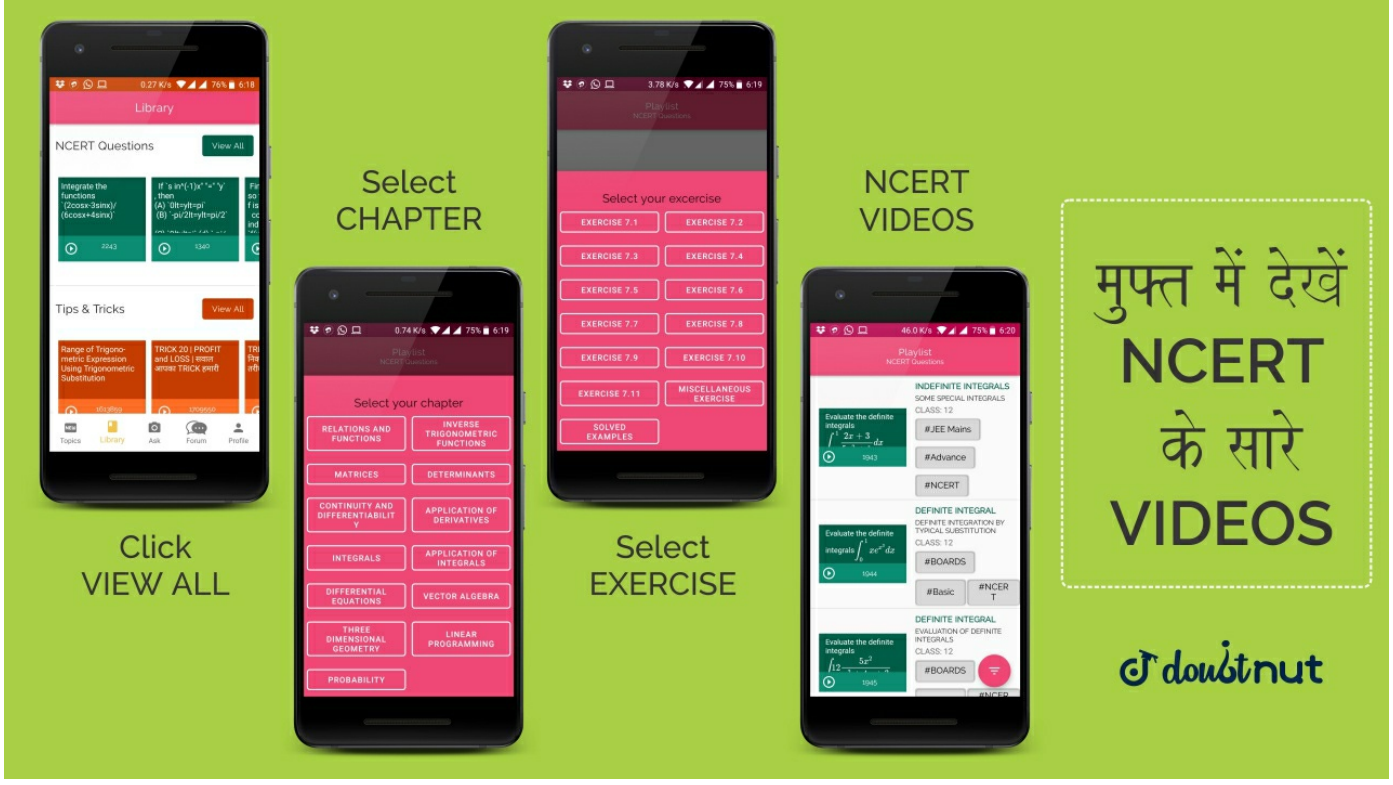

NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 20

78

If sum of the perpendicular distances of a variable point $P \quad (x, \quad y)$ from the lines $x \quad + \quad y \quad 5 \quad = \quad 0$ and $3x \quad 2y \quad + 7 \quad = \quad 0$ is always 10. Show that P must move on a line.

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NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 21

79

Find equation of the line which is equidistant from parallel lines $9x \quad + \quad 6y \quad - \quad 7 \quad = \quad 0$ and $3x \quad + \quad 2y \quad + 6 \quad = \quad 0$.

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NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 22

80

A ray of light passing through the point (1, 2) reflects on the x–axis at point A and the reflected ray passes through the point (5, 3). Find the coordinates of A.

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NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 23

81

Prove that the product of the lengths of the perpendiculars drawn from the points $\left(\sqrt{a^2 - b^2}, 0\right)$ and $\left(- \sqrt{a^2 - b^2}, 0\right)$ to the line $\frac{x}{a} \cos\theta \; + \; \frac{y}{b} \sin\theta = 1$ is b^2 .

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82	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - MISCELLANEOUS EXERCISE - Q 24** A person standing at the junction (crossing) of two straight paths represented by the equations $2x + 3y + 4 = 0$ and $3x + 4y - 5 = 0$ wants to reach the path whose equation is $6x - 7y + 8 = 0$ in the least time. Find Watch Free Video Solution on Doubtnut
83	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 1** Find the slope of the lines: (a) Passing through the points $(3, 2)$ and (1.4) , (b) Passing through the points $(3, 2)$ and $(7, \quad 2)$, (c) Passing through the points $(3, 2)$ and $(3, 4)$, (d) Making inclination of $60o$ with the p Watch Free Video Solution on Doubtnut
84	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 2** If the angle between two lines is $\frac{\pi}{4}$ and slope of one of the lines is $\frac{1}{2}$, find the slope of the other line. Watch Free Video Solution on Doubtnut

85	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 3** Line through the points $(2, \quad 6)$ and $(4, \quad 8)$ is perpendicular to the line through the points $(8, \quad 12)$ and $(x, \quad 24)$. Find the value of x. Watch Free Video Solution on Doubtnut
86	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 4** Three points $P(h, k), Q(x_1, y_1)$ and $R(x_2, y_2)$ lie on a line. Show that $(h - x_1)(y_2 - y_1)$ $= (k - y_1)(x_2$ $- x_1)$. Watch Free Video Solution on Doubtnut
87	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 5** In Figure, time and distance graph of a linear motion is given. Two positions of time and distance are recorded as, when T = 0, D = 2 and when T = 3, D = 8. Using die concept of slope, find law of motion, i.e., how distance depends upon time. Watch Free Video Solution on Doubtnut
88	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 6** Find the equations of the lines parallel to axes and passing through $(-2, \quad 3)$. Watch Free Video Solution on Doubtnut
89	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 7** Find the equation of the line through $(\quad 2, \quad 3)$ with slope $\quad 4$. Watch Free Video Solution on Doubtnut

90	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 8** Write the equation of the line through the points $(1, \quad 1)$ and $(3, \quad 5)$. Watch Free Video Solution on Doubtnut
91	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 9** Write the equation of the line for which $\tan\theta = \frac{1}{2}$, where θ is the inclination of the line and (i) yintercept is $-\frac{3}{2}$ (ii) xintercept is 4. Watch Free Video Solution on Doubtnut
92	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 10** Find the equation of the line, which makes intercepts 3 and 2 on the x and y axes respectively. Watch Free Video Solution on Doubtnut
93	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 11** Find the equation of the line whose perpendicular distance from the origin is 4 units and the angle which the normal makes with positive direction of xaxis is $15o$. Watch Free Video Solution on Doubtnut
94	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 12** The Fahrenheit temperature F and absolute temperature K satisfy a linear equation. Given that $K = 273$ when $F = 32$ and that $K = 373$ when $F = 212$. Express K in terms of F and find the value of F, when $K = 0$. Watch Free Video Solution on Doubtnut
95	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 13** Equation of a line is $3x - 4y + 10 = 0$. Find its (i) slope, (ii) x and yintercepts. Watch Free Video Solution on Doubtnut

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NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 14

Reduce the equation $\sqrt{3}x + y - 8 = 0$ into normal form. Find the values of p and ω .

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NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 15

Find the angle between the lines $y - \sqrt{3}x - 5 = 0$ and $\sqrt{3}y - x + 6 = 0$.

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NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 16

Show that two lines $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$, where $b_1, b_2 \neq 0$ are : (i) Parallel if $\frac{a_1}{b_1} = \frac{a_2}{b_2}$, and (ii) perpendicular if $a_1a_2 + b_1b_2 = 0$.

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NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 17

Find the equation of a line perpendicular to the line $x - 2y + 3 = 0$ and passing through the point $(1, \quad 2)$.

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NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 18

Find the distance of the point $(3, \quad - \quad 5)$ from the line
$3x \quad - \quad 4y$
$- \quad 26 \quad = 0$

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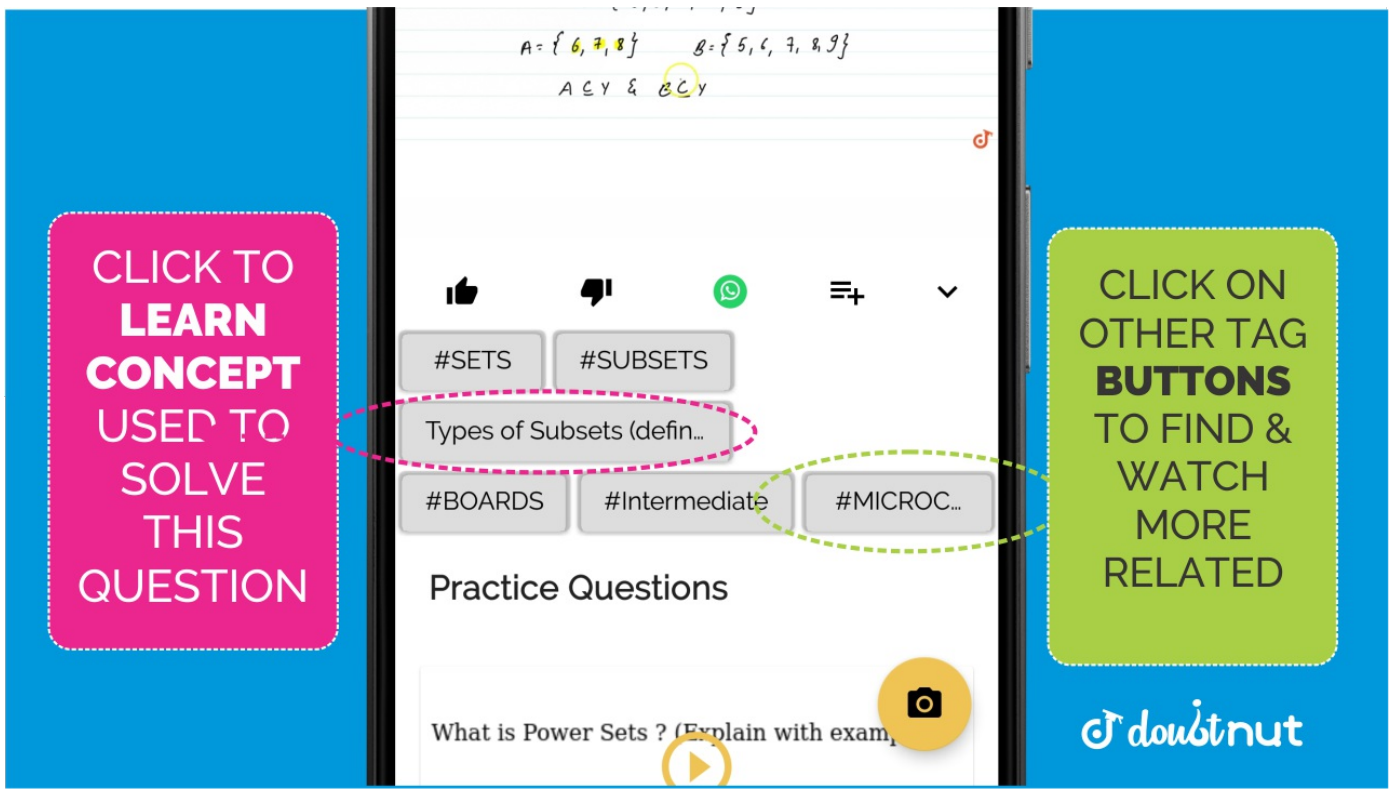
101	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 19** Find the distance between the parallel lines $3x \quad 4y$ $+ \quad 7 \quad = \quad 0$ and $3x \quad 4y$ $+ \quad 5 \quad = \quad 0$. Watch Free Video Solution on Doubtnut



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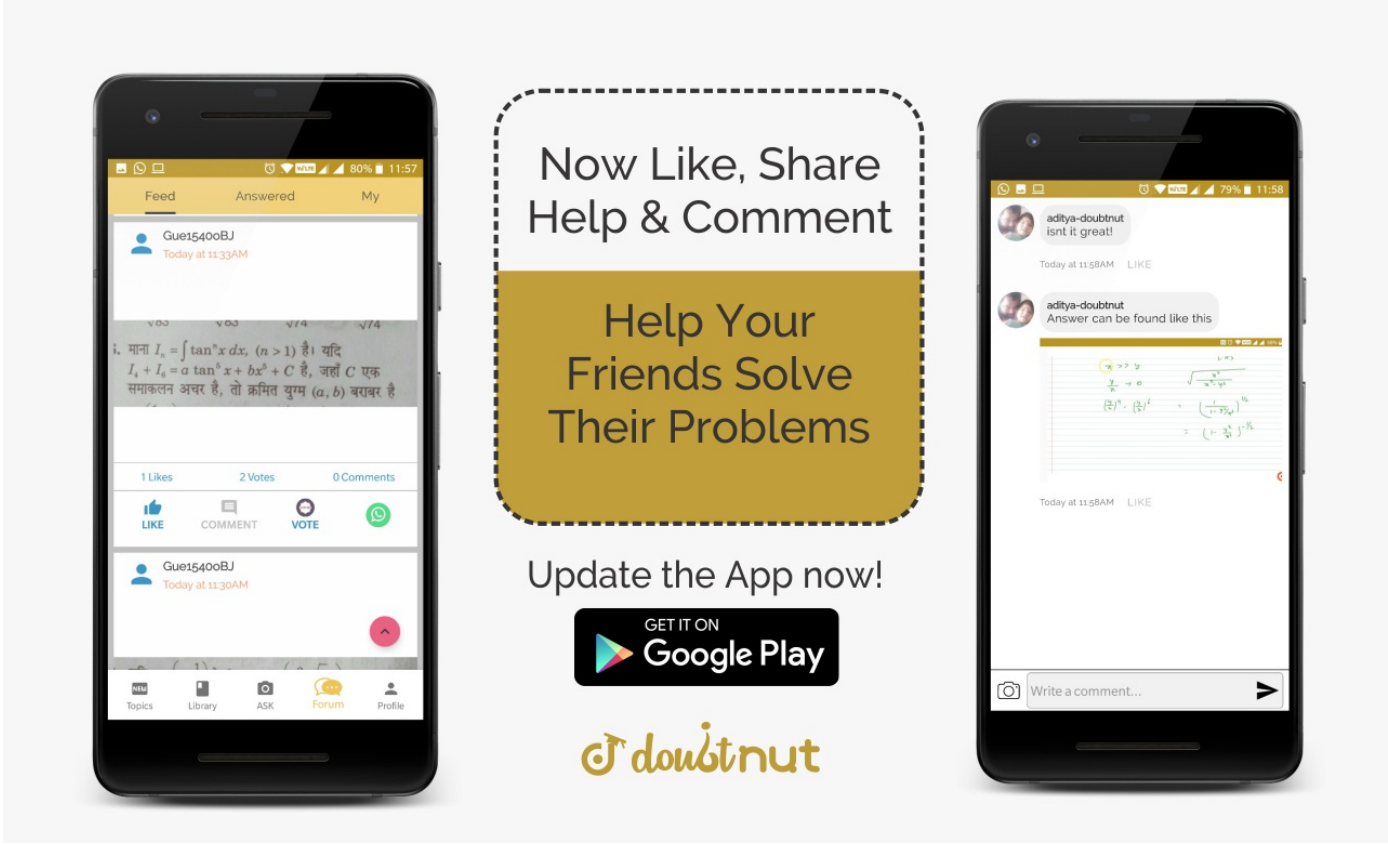
102	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 20** If the lines $2a \quad + \quad y \quad 3$ $= \quad 0$, $5x \quad + \quad ky \quad 3$ $= \quad 0$ and $3x \quad y \quad 2$ $= \quad 0$ are concurrent, find the value of k. Watch Free Video Solution on Doubtnut
103	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 21** Find the distance of the line $4x \quad y \quad = \quad 0$ from the point P(4, 1) measured along the line making an angle of $135o$ with the positive xaxis. Watch Free Video Solution on Doubtnut

104	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 22** Assuming that straight lines work as the plane mirror for a point, find the image of the point (1, 2) in the line $x \quad 3y \quad + \quad 4 \quad = \quad 0$. Watch Free Video Solution on Doubtnut
105	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 23** Show that the area of the triangle formed by the lines $y = m_1 x + c_1, y = m_2 x + c_2$ and $x = 0$ is $\frac{(c_1 - c_2)^2}{2\lvert m_1 - m_2 \rvert}$ Watch Free Video Solution on Doubtnut
106	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 24** A line is such that its segment between the lines $5x \quad y \quad + \quad 4 \quad = \quad 0$ and $3x \quad + \quad 4y \quad 4 \quad = \quad 0$ is bisected at the point (1, 5). Obtain its equation. Watch Free Video Solution on Doubtnut
107	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 25** Show that the path of a moving point such that its distances from two lines $3x \quad 2y \quad = \quad 5$ and $3x \quad + \quad 2y \quad = \quad 5$ are equal is a straight line. Watch Free Video Solution on Doubtnut



108	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 26** Find the equation of line parallel to the y-axis and drawn through the point of intersection of $x\ \ 7y + \ \ 5\ $ $= \ \ 0$ and $3x + y\ \ 7\ \ = \ \ 0$. Watch Free Video Solution on Doubtnut
109	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 27** Find the new coordinates of point $(3, 4)$ if the origin is shifted to (1, 2) by a translation. Watch Free Video Solution on Doubtnut
110	**NCERT - CLASS 11 - CHAPTER 10 STRAIGHT LINES - SOLVED EXAMPLES - Q 28** Find the transformed equation of the straight line $2x \quad 3y + \quad 5$ $= \quad 0$, when the origin is shifted to the point $(3, \quad -1)$ after translation of axes. Watch Free Video Solution on Doubtnut
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