



MATHS

NCERT - NCERT MATHEMATICS(TELUGU)

STRAIGHT LINES



1. Find the slope of the lines :

Passing through the points (3, -2) and (-1, 4)



2. Find the slope of the lines :

Passing through the points (3, -2) and (7, -2)



4. Find the slope of the lines :

Making inclination of 60° with the positive direction of x- axis.

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



6. Line through the points (-2, 6) and (4, 8) is perpendicular to the line through the points (8, 12) and (x, 24). Find the value of x.

7. Three points $P(h,k), Q(x_1,y_1)$ and $R(x_2,Y_2)$ lie on a

line. Show that $(h-x_1)(y_2-y_1) = (k-y_1)(x_2-x_1).$

8. In fig 10.9, time and distance graph of a linear motion is given.

Two positions of time and distance are recorder as, when T = 0, D = 2 and when T = 3, D = 8. Using the concept of slope, find law of motion , i.e., how distance depends upon time.



9. Find the equations of the lines parallel to axes and passing through (-2, 3).



10. Find the equation of the line through (-2,3) with slope

-4.



11. Write the equation of the line through the points (1, -1) and (3, 5).

12. Find the product of the following pairs?

 $7x^2y^3, 11x^3$



13. Find the product of the following pairs?

 $7a^4bc^2,\,2a^3b^3$



14. 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 x - axis is 15° .



15. The Fahrenheit remperature F and absolute temperature K satisfy a linear equation. Given that $K=273~{
m when}~F=32$ and that K = 373 when F = 212.

Express K in terms of F and find the value of F, when K = 0.

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16. Equation of a line is 3x - 4y + 10 = 0. Find its (i) slope ,

(ii) x - and y - intercepts.

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17. Reduce the equation $\sqrt{3}x + y - 8 = 0$ into normal form.

Find the values of p and ω .



19. 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
 $a_1a_2 + b_1b_2 = 0$.

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



21. Find the distance of the point (3, -5) from the line 3x - 4y - 26 = 0.

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22. Find the distance between the parallel lines 3x - 4y + 7 = 0 and 3x - 4y + 5 = 0

23. If the lines

2x + y - 3 = 0, 5x + ky - 3 = 0 and 3x - y - 2 = 0 are

concurrent , find the value of k.

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24. Find the product of the following pairs?

 $12x^5y, 21x^2y^2$

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25. Find the product of the following pairs?

 $7x^2y^3, 5x^3yz$



26. Find the product of the following pairs?

 $8a^2bc^2, 10ab^3c$

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27. Find the product of the following pairs?

 $11a^2b, 3a^3b^2$



28. Find the product of the following pairs?

 $4a^2bc^3, 10a^4b$



1. Find the product of the following pairs?

 $10p^2q, 11pq^2$

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2. Find the product of the following pairs?

 $9a^2b, 2a^3b^3$

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3. Find the distance between $P(x_1, y_1)$ and $Q(x_2, y_2)$ when

: (i) PQ is parallel to the y-axis, (ii) PQ is parallel to the x-axis.



4. Find a point on the x-axis, which is equidistant from the points (7,6) and (3, 4).

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

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6. Without using the Pythagoras theorem, show that the points (4,4), (3, 5) and (-1, -1) are the vertices of a right angled triangle.





parallelogram.





 $9p^3qr^2,\,3pq^4$

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12. A line passes through (x_1, y_1) $ext{ and } (h, k)$. If slope of the

line is m, show that $k - y_1 = m(h - x_1)$.

13. If three points (h, 0),(a, b) and (0, k) lie on a line, show that

$$\frac{a}{h} + \frac{b}{k} = 1.$$

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14. Consider the following population and year graph (Fig 10.10), find the slope of the line AB and using it, find what will be the population in the year 2010?







4. Find the product of the following pairs?

 $6x^2, 5y^2$

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5. Intersecting the x-axis at a distance of 3 units to the left of
origin with slope -2 .
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6. Find the product of the following pairs?
$11x^3y, 11y^2z$
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8. Perpendicular distance from the origin is 5 units and the angle made by the perpendicular with the positive x-axis is 30°



9. Write the following in the standard notation

100 imes 2 + 10 imes 9 + 1

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 Video Solution

11. Write the following in the standard notation

100 imes 1 + 10 imes 2 + 3



12. Find the equation of a line that cuts off equal intercepts on

the coordinate axes and passes through the point (2,3).



100 imes 2 + 10 imes 3 + 4



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15. The perpendicular from the origin to a line meets it at the

point (-2, 9) find the equation of the line.

1000 imes 2+100 imes 3+10 imes 1+2



18. Write the following in the standard notation

100 imes 4 + 10 imes 2 + 8

 $100\times9+10\times7+3$



20. By using the concept of equation of a line, prove that the three points (3, 0), (-2, -2) and (8, 2) are collinear.





1. Write the following in the standard notation

 $100\times6+10\times5+3$

 $100\times5+10\times4+2$

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3. Write the following in the standard notation

100 imes9+10 imes2+7

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

12(x+6) = 5(y-2).

5. Find the points on the x-axis, whose distances from the line

$$rac{x}{3}+rac{y}{4}=1$$
 are 4 units.



6. Write the following in the standard notation

100 imes 6 + 10 imes 2 + 9



- 7. Find equation of the line parallel to the line
- 3x 4y + 2 = 0 and passing through the point (-2, 3).

8. Find equation of the line perpendicular to the line x - 7y + 5 = 0 and having x intercept 3.



10. Write the following in the standard notation

100 imes 6 + 10 imes 5 + 1

1000 imes1+100 imes2+10 imes3+4



13. Write the following in the standard notation

100 imes 4 + 10 imes 2 + 1

100 imes 3 + 10 imes 4 + 6



15. Write the following in the standard notation

 $100\times7+10\times3+8$



16. Write the following in the standard notation

100 imes 9 + 10 imes 9 + 1

 $100\times8+10\times8+8$

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18. Write the place of numbers underlined?

 $4\underline{5}6\underline{1}8$



Miscellaneous Exercise On Chapter 10

1. Write the place of numbers underlined?

12372

2. Write the place of numbers underlined?

 $2\underline{25}11$

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3. Write the place of numbers underlined?

9<u>16</u>23

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4. Write the place of numbers underlined?

 $7\underline{2}87\underline{6}$

5. Write the place of numbers underlined?

 $10\underline{92}5$



7. Write the place of numbers underlined?

 $3\underline{2}6\underline{2}1$

8. Write the place of numbers underlined?

 $5\underline{68}43$



 $11ab^3, 9a^2$

11. Find the product of the following

 $9p^2,\,2q^3$

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12. Find the product of the following

 $5a^3b, 2b^3c$



13. Find the product of the following

 $6x^2y, 21xy^2$

14. Find the product of the following



15. Find the product of the following

 $5a^2b^2, 8a^3$



16. Find the product of the following

 $6x^2y, 6x^2$

17. Find the product of the following

 $2p^3q, 7pq^4$

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18. Find the product of the following

 $13p^2qr, 2pq^3$



19. Find the product of the following

 $5a^3b, 7ab^2$

20. Find the product of the following pairs

 $11p^2qr,\,6p^2$



 $7ab^3,\,10a^2,\,2b^2$



22. Find the product of the following pairs

 $17x^2y, 2y^2$

23. Find the product of the following pairs

 $3x^2, 5y^2, 4z^2$

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24. Find the product of the following pairs

 $3a^2b, 6ab^3c^2$