LATEX ASSIGNMENT

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EXERCISE 11.10.2

In excercises 1 to 8, find the equation of the line which satisfy the given conditions:

1. Write the equations for x and y axes.
2. Passing through the point $(-4, 3)$ with slope $\frac{1}{2}$.
3. Passing through $(0, 0)$ with slope m.
4. Passing through $(2, \sqrt{3})$ and inclined with x axis at an angle of $75°$.
5. Intersecting the x axis at a distance of 3 units to the left of the origin with slope -2.
6. Intersecting the y axis at a distance of 2 units above the origin and making an angle of 30 with positive direction of the x axis.
7. Passing through the points $(-1, 1)$ and $(2, -4)$.
8. Perpendicular distance from the origin is 5 units and the angle made by the perpendicular with the positive x axis is 30.
9. The vertices of $\triangle PQR$ are $P(2, 1), Q(-2, 3)$ and $R(4, 5)$. Find equation of the median through the vertex R.
10. Find the equation of the line passing through $(-3, 5)$ and perpendicular to the line through the points $(2, 5)$ and $(-3, 6)$.
11. A line perpendicular to the line segment joining the points $(1, 0)$ and $(2, 3)$ divides it in the ratio $1 : n$. Find the equation of the line.
12. Find the equation of the line that cuts off equal axes and passes through the point $(2, 3)$.
13. Find equation of the line passing through the point $(2, 2)$ and cutting off intercepts on the axes whose sum is 9.

14. Find equation of the line through the point $(0, 2)$ making an angle $\frac{2\pi}{3}$ with the positive x axis. Also, find the equation of the parallel to it and crossing the y axis at a distance of 2 units below the origin.

15. The perpendicular from the origin to a line meets it at the point $(-2, 9)$, find the equation of the line.

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.

17. The owner of a milk store finds that, he can sell 980 litres of milk each week at ₹ 14/litre and 1220 litres of milk each week at ₹ 16/litre. Assuming a linear relationship between selling price and demand, how many litres could he sell weekly at ₹ 17/ litre?

18. $P(a, b)$ is the mid-point of a line segment between axes. Show that equation of the line is $\frac{x}{a} + \frac{y}{b} = 2$

19. Point $R(h, k)$ divides a line segment betwween the axes in the ratio $1 : 2$. find equation of the line.

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