DPP
DAILY PRACTICE PROBLEMS

Class : XIth **Subject : MATHS**
Date : **DPP No. : 7**

Topic :- STRAIGHT LINES

1. The equation of perpendicular bisectors of sides AB and AC of a ΔABC are $x - y + 5 = 0$ and $x + 2y = 0$ respectively. If the coordinates of vertex A are $(1, -2)$, then equation of BC is
   a) $14x + 23y - 40 = 0$ b) $14x - 23y + 40 = 0$ c) $23x + 14y - 40 = 0$ d) $23x - 14y + 40 = 0$
2. If the line $px - qy = r$ intersects the coordinate axes at $(a, 0)$ and $(0, b)$, thyen the value of $a + b$ is equal to
   a) $r\left(\frac{q+p}{pq}\right)$ b) $r\left(\frac{q-p}{pq}\right)$ c) $r\left(\frac{p-q}{pq}\right)$ d) $r\left(\frac{p+q}{p-q}\right)$
3. The distance between the parallel lines $y = 2x + 4$ and $6x = 3y + 5$ is
   a) $17/\sqrt{3}$ b) 1 c) $3/\sqrt{5}$ d) $17\sqrt{5}/15$
4. The value of $'a'$ for which the lines represented by $ax^2 + 5xy + 2y^2 = 0$ are mutually perpendicular is
   a) 2 b) -2 c) $\frac{25}{8}$ d) None of these
5. The vertices of ΔOBC are $(0, 0)$, $(-3, -1)$ and $(-1, -3)$, then the equation of the line parallel to BC which is a distance $\frac{1}{2}$ from the origin and cut OB and OC intercept, is
   a) $2x - 2y + \sqrt{2} = 0$ b) $2x + 2y + \sqrt{2} = 0$ c) $2x + 2y - \sqrt{2} = 0$ d) $x + y\sqrt{2} = 0$
6. Two consecutive sides of a parallelogram are $4x + 5y = 0$ and $7x + 2y = 0$. One diagonal of the parallelogram is $11x + 7y = 9$. If the other diagonal is $ax + by + c = 0$, then
   a) $a = -1, b = -1, c = 2$ b) $a = 1, b = -1, c = 0$
   c) $a = -1, b = -1, c = 0$ d) $a = 1, b = 1, c = 0$
7. The equations of the lines through $(1, 1)$ and making angle of $45°$ with the line $x + y = 0$ are
   a) $x - 1 = 0, x - y = 0$ b) $x - y = 0, y - 1 = 0$
   c) $x + y - 2 = 0, y - 1 = 0$ d) $x - 1 = 0, y - 1 = 0$
8. The equation of the straight line perpendicular to $5x - 2y = 7$ and passing through the point of intersection of the lines $2x + 3y = 1$ and $3x + 4y = 6$, is
   a) $2x + 5y + 17 = 0$ b) $2x + 5y - 17 = 0$ c) $2x - 5y + 17 = 0$ d) $2x - 5y = 17$
9. The orthocentre of the triangle whose vertices are $(5, -2)$,$(-1,2)$ and $(1,4)$, is
   a) $(1/5,14/5)$ b) $(14/5,1/5)$ c) $(1/5,1/5)$ d) $(14/5,14/5)$
10. The equation(s) of the bisector(s) of that angle between the lines $x + 2y - 1 = 0, 3x - 6y - 5 = 0$ which contains the point $(1, -3)$ is
    a) $3x = 19$ b) $3y = 7$ c) $3x = 19$ and $3y = 7$ d) None of these
11. Three straight lines $2x + 11y - 5 = 0, 24x + 7y - 20 = 0$ and $4x - 3y - 2 = 0$
    a) From a triangle b) Are only concurrent
    c) Are concurrent with one line bisecting the angle between the other two d) None of the above

12. Let a and b be non-zero and real numbers. Then, the equation $(ax^2 + by^2 + c)(x^2 - 5xy + 6y^2) = 0$ represents

a) Four straight lines, when $c = 0$ and a,b are of the same sign b) Two straight lines and a circle, when $a = b$ and c is of sign opposite to that of a

c) Two straight lines and hyperbola, when a and b are of the same sign and c is of sign opposite to that of a d) A circle and an ellipse , when a and b are of the same sign and c is of sign opposite to that of a

13. A line passes through the point of intersection of the lines $100x + 50y - 1 = 0$ and $75x + 25y + 3 = 0$ and makes equal intercept on the axes. Its equation is

a) $25x + 25y - 1 = 0$ b) $5x - 5y + 3 = 0$ c) $25x + 25y - 4 = 0$ d) $25x - 25y + 6 = 0$

14. If the line segment joining $(2,3)$ and $(-1,2)$ is divided internally in the ratio $3:4$ by the line $x + 2y = \lambda$, then $\lambda =$

a) $\frac{41}{7}$ b) $\frac{5}{7}$ c) $\frac{36}{7}$ d) $\frac{31}{7}$

15. The angle between the lines $\sqrt{3}x - y - 2 = 0$ and $x - \sqrt{3}y + 1 = 0$ is

a) $90°$ b) $60°$ c) $45°$ d) $30°$

16. A diagonal of the rectangle formed by the lines $x^2 - 7x + 6 = 0$ and $y^2 - 14y + 40 = 0$ is

a) $5x + 6y = 0$ b) $5x - 6y = 0$ c) $6x - 5y + 14 = 0$ d) $6x - 5y - 14 = 0$

17. If a line with y-intercept 2, is perpendicular to the line $3x - 2y = 6$, then its x- intercept is

a) 1 b) 2 c) -4 d) 3

18. The distance between the pair of parallel lines given by $x^2 - 1005x + 2006 = 0$ is

a) 1001 b) 1000 c) 1005 d) 2006

19. The pair of lines $\sqrt{3}\,x^2 - 4xy + \sqrt{3}\,y^2 = 0$ are rotated about the origin by $\pi/6$ in anticlockwise sense. The equation of the pair in the new position is

a) $\sqrt{3}\,x^2 - xy = 0$ b) $x^2 - \sqrt{3}\,xy = 0$ c) $xy - \sqrt{3}\,y^2 = 0$ d) None of these

20. The area of the parallelogram formed by the lines $3x - 4y + 1 = 0$, $3x - 4y + 3 = 0$, $4x - 3y - 1 = 0$ and $4x - 3y - 2 = 0$, is

a) $\frac{1}{6}$ sq. units b) $\frac{2}{7}$ sq. units c) $\frac{3}{8}$ sq. units d) None of these