GOVERNMENT OF KARNATAKA

DEPARTMENT OF SCHOOL EDUCATION (PRE-UNIVERSITY)

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CHAPTERWISE MULTIPLE CHOICE QUESTIONS FOR COMPETATIVE EXAM

SUBJECT: MATHEMATICS – I PUC

NAME OF THE CHAPTER: STRAIGHT LINES

Slope of a Line:

- If θ is the inclination of a line l, then $\tan\theta$ is called the slope or gradient of the line l.
- The slope of a line whose inclination is 90° is not defined. The slope of a line is denoted by m. Thus, $\boldsymbol{m = \tan\theta}$, $\theta \neq 90°$
- It may be observed that the slope of x-axis is zero and slope of y-axis is not defined
- Slope of a line when coordinates of any two points $P(x_1,\ y_1)$ and $Q(x_2,\ y_2)$ on the line are given is given by $\boldsymbol{m = \frac{y_2 - y_1}{x_2 - x_1}}$
- Conditions for parallelism and perpendicularity of lines in terms of their slopes

  Let $m_1$be the slope of line l_1 and m_2 be the slope of the line l_2.
  - If $\boldsymbol{l_1 \parallel l_2}$ then $\boldsymbol{m_1 = m_2}$ and
  - if $\boldsymbol{l_1 \perp l_2}$ then $\boldsymbol{m_1 . m_2 = -1}$ or $\boldsymbol{m_1 = -\frac{1}{m_2}}$ or $\boldsymbol{m_2 = -\frac{1}{m_1}}$

Angle between two lines:

The acute angle α between two lines l_1 and l_2 with slopes m_1 and m_2 is given by

$\tan\alpha = \left|\frac{m_1 - m_2}{1 + m_1 m_2}\right|$

Various Forms of the Equation of a Line:

Horizontal and vertical lines

- ✓ Equation of line parallel to x-axis is of the form $y = k$ where k is real constant.

  In particular, equation of x-axis is $\boldsymbol{y = 0}$.
- ✓ Equation of line parallel to y-axis is of the of form $x = k$ where k is real constant.

  In particular, equation of y-axis is $\boldsymbol{x = 0}$

Point-slope form:

Equation of line passing through a given point (x_1, y_1) and having slope m is given by

$$\boldsymbol{y - y_1 = m(x - x_1)}$$

Two-point form:

Equation of line passing through two given points (x_1, y_1) and (x_2, y_2) is given by

$$\boldsymbol{y - y_1 = \left(\frac{y_2 - y_1}{x_2 - x_1}\right)(x - x_1)} \quad \text{or} \quad \frac{x - x_1}{x_2 - x_1} = \frac{y - y_1}{y_2 - y_1}$$

Slope-Intercept form

- ✓ Equation of line with slope m and y-intercept c is given by $\boldsymbol{y = mx + c}$
- ✓ Equation of line with slope m and x-intercept d is given by $\boldsymbol{y = m(x - d)}$

Intercept form

- ✓ Equation of line with x-intercept a and y-intercept b is given by $\boldsymbol{\frac{x}{a} + \frac{y}{b} = 1}$

General equation of a line:

The general equation of a line is given by $\boldsymbol{Ax + By + C = 0}$.

Note:

- If $A = 0$ then the line is parallel to x-axis.
- If $B = 0$ then the line is parallel to y-axis.
- If $C = 0$ then the line is passes through origin
- Slope, $\boldsymbol{m = -\frac{A}{B}}$
- x-intercept, $\boldsymbol{a = -\frac{C}{A}}$
- y-intercept, $\boldsymbol{b = -\frac{C}{B}}$
- Equation of any line parallel to $Ax + By + C = 0$ is of the form $\boldsymbol{Ax + By + k = 0}$
- Equation of any line perpendicular to $Ax + By + C = 0$ is of the form $\boldsymbol{Bx - Ay + k = 0}$

Distance of a Point from a Line:

The distance of a point from a line is the length of the perpendicular drawn from the point (x_1, y_1) to the line $Ax + By + C = 0$ is given by $\boldsymbol{d = \frac{|Ax_1 + By_1 + C|}{\sqrt{A^2 + B^2}}}$

Distance between parallel lines:

- Considering the lines in slope-intercept form, The distance between two parallel lines $y = mx + c_1$ and $y = mx + c_2$ is given by $\boldsymbol{\frac{|c_2 - c_1|}{\sqrt{1 + m^2}}}$
- Considering the lines in their general form the distance between two parallel lines $Ax + By + C_1 = 0$ and $Ax + By + C_2 = 0$ is given by $\boldsymbol{\frac{|C_2 - C_1|}{\sqrt{A^2 + B^2}}}$

- ❖ The area of the triangle bounded by the straight line $Ax + By + C = 0, (a, b, c \neq 0)$ and the coordinate axes is $\frac{1}{2}\frac{C^2}{|AB|}$
- ❖ If (h, k) is the foot of the perpendicular from (x_1, y_1) to the line $Ax + By + C = 0$ then $\frac{h-x_1}{A} = \frac{k-y_1}{B} = \frac{-(Ax_1+By_1+C)}{A^2+B^2}$
- ❖ If (h, k) is the image of (x_1, y_1) with respect to the line $Ax + By + C = 0$ then $\frac{h-x_1}{A} = \frac{k-y_1}{B} = \frac{-2(Ax_1+By_1+C)}{A^2+B^2}$

OTHER FORMULAE STUDIED IN PREVIOUS CLASSES RELATED TO COORDINATE GEOMETRY:

- Distance between the points $P(x_1, y_1)$ and $Q(x_2, y_2)$ is $PQ = \sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$
- The coordinates of a point dividing the line segment joining the points (x_1, y_1) and (x_2, y_2) internally, in the ratio $m : n$ are $\left(\frac{mx_2+nx_1}{m+n}, \frac{my_2+ny_1}{m+n}\right)$.
- In particular, if $m = n$, the coordinates of the mid-point of the line segment joining the points (x_1, y_1) and (x_2, y_2) are $\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$
- Area of the triangle wtih vertices (x_1, y_1), (x_2, y_2) and (x_3, y_3) is given by $A = \frac{1}{2}|x_1(y_2-y_3) + x_2(y_3-y_1) + x_3(y_1-y_2)|$

Remark:

If the area of the triangle ABC is zero, then three points A, B and C lie on a line, i.e., they are collinear.

SLOPE

1. **The slope of the line which makes $45°$ with positive x-axis measured anticlockwise is** ***(Easy)***

   (A) -1 (B) 1 (C) 0 (D) not defined.

2. **The slope of the line which makes $\frac{\pi}{4}$ with positive y-axis measured anticlockwise is** ***(Easy)***

   (A) -1 (B) 1 (C) 0 (D) not defined.

3. **The angle of inclination with respect to positive x-axis, of the line with slope -1 is** ***(Easy)***

   (A) $-1°$ (B) $1°$ (C) $\frac{\pi}{4}$ (D) $\frac{3\pi}{4}$.

4. **The line if its slope is zero is** ***(Easy)***

   (A) Either the line is y-axis or it parallel to y-axis

   (B) θ is an obtuse angle

   (C) Either the line is x-axis or it parallel to x-axis

   (D) θ is an acute angle

5. **The slope of the line through the points $(3,-2)$ and $(-1,4)$ is** ***(Easy)***

   (A) $\frac{2}{3}$ (B) $\frac{3}{2}$ (C) $-\frac{3}{2}$ (D) not defined.

6. **The slope of the line through the points $(3,-2)$ and $(3,4)$ is** ***(Easy)***

   (A) 0 (B) 4 (C) -1 (D) not defined.

7. **Line through the points $(-2,6)$ and $(4,8)$ is parallel to the line through the points $(8,12)$ and $(x,24)$,then the value of x.** ***(Easy)***

   (A) 0 (B) 4 (C) -1 (D) 44.

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

   (A) 0 (B) 4 (C) -1 (D) 44.

9. **The slope of the line which makes angle 300 with positive direction of y axis measured anticlockwise** ***(Easy)***

   (A) $\sqrt{3}$ (B) $-\sqrt{3}$ (C) 1 (D) $\frac{1}{\sqrt{3}}$.

10. **If three points (h, 0), (a, b) and (0, k) lie on a line, then** ***(Difficult)***

    (A) $\frac{a}{h}+\frac{b}{k}=1$ (B) $\frac{a}{h}-\frac{b}{k}=1$ (C) $\frac{h}{a}+\frac{k}{b}=1$ (D) $\frac{h}{a}-\frac{k}{b}=1$.

11. **A line cuts off equal intercepts on the co-ordinate axes. The angle made by this line with the positive direction of x-axis is** ***[KCET 2019] (Average)***

    (A) 120^0 (B) 45^0 (C) 135^0 (D) 90^0

12. **If the co-ordinates of the points A and B be $(1,0)$ and $(2,\sqrt{3})$, then the angle made by the line AB with x-axis is** ***(Average)***

(A) 30° (B) 45° (C) 60° (D) 75°

13. **The line passes through $(1,0)$ and $(-2,\sqrt{3})$ makes an angle of ..... with x-axis** ***(Average)***

(A) 60° (B) 120^o (C) 150° (D) 135°

14. **The line passing through the points $(3,-4)$ and (-2, 6) and a line passing through $(-3,6)$ and $(9,-18)$ are** ***(Easy)***

(A) Perpendicular (B) Parallel

(C) Makes an angle 60° with each other (D) None of these

15. **The angle between the lines l_1 passing through the points $(2,-1)$ and $(-2,3)$ and l_2 passing through $(4,1)$ and $(-2,1)$ are** ***(Difficult)***

(A) 0^o (B) 120^o (C) 90° (D) 45°

Various forms of Equation of Line

16. **Equation of the line passing through $(-2,3)$ with slope -4 is** ***(Easy)***

(A) $4x+y-11=0$ (B) $4x+y+5=0$

(C) $x+4y-11=0$ (D) $x+4y+5=0$.

17. **Equation of the line through the points (1,-1) and (3,5) is** ***(Easy)***

(A) $y=3x+4$ (B) $y=3x-4$ (C) $3x+y-4=0$ (D)$3x+y+4=0$.

18. **Equation of the lines for which $\tan\theta=\frac{1}{2}$ where θ is the inclination of the line and y-intercept is 4 is** ***(Easy)***

(A) $x-2y+8=0$ (B) $y=x+8$ (C) $x+2y+8=0$ (D) $-x+2y+4=0$.

19. **Equation of the line passing through the point $(2,3)$ with inclined with x-axis at an angle of 45° *is*** ***(Average)***

(A) $x-y+5=0$ (B) $x-y-1=0$ (C) $x+y+8=0$ (D) $x-y+1=0$

20. **Equation of the line intersecting the x-axis at a distance of 3 units to the left of origin with slope –2 is** ***(Average)***

(A) $2x-2y-6=0$ (B) $y=2x+6$ (C) $2x-y+6=0$ (D) $2x+y+6=0$.

21. **The vertices of ΔPQR are $P(2,1)$, $Q(-2,3)$ and $R(4,5)$, then equation of the median through the vertex R.** ***(Average)***

(A) $3x+4y-8=0$ (B) $3x+4y+8=0$

(C) $3x-4y+8=0$ (D) $3x-4y-8=0$.

22. **A line meets x-axis and y-axis at the points A and B respectively. If the middle point of AB be (x_1, y_1), then the equation of the line is** ***(Average)***

(A) $y_1x + x_1y = 2x_1y_1$ (B) $x_1x + y_1y = 2x_1y_1$

(C) $y_1x + x_1y = x_1y_1$ (D) $x_1x + y_1y = x_1y_1$

23. **The equation of a straight line passing through $(-2, 3)$ and cutting an intercept equal in magnitude but opposite in sign from the axes is given by** ***(Average)***

(A) $x - y + 5 = 0$ (B) $x + y - 5 = 0$ (C) $x - y - 5 = 0$ (D) $x + y + 5 = 0$

24. **The points $A(1, 3)$ and $C(5, 1)$ are the opposite vertices of rectangle. The equation of line passing through other two vertices and of gradient 2, is** ***(Difficult)***

(A) $2x + y - 8 = 0$ (B) $2x - y - 4 = 0$ (C) $2x - y + 4 = 0$ (D) $2x + y + 7 = 0$

25. **The equation of line whose mid point is (x_1, y_1) in between the axes, is** ***(Average)***

(A) $\frac{x}{x_1} + \frac{y}{y_1} = 2$ (B) $\frac{x}{x_1} + \frac{y}{y_1} = \frac{1}{2}$ (C) $\frac{x}{x_1} + \frac{y}{y_1} = 1$ (D) None of these

26. **The equation of the line passing through $(4, -6)$ and makes an angle $45°$ with positive x-axis, is** ***(Average)***

(A) $x - y - 10 = 0$ (B) $x - 2y - 16 = 0$

(C) $x - 3y - 22 = 0$ (D) None of these

27. **The equation of a straight line passing through the points (-5, -6) and (3, 10), is** ***(Easy)***

(A) $x - 2y = 4$ (B) $2x - y + 4 = 0$ (C) $2x + y = 4$ (D) None of these

28. **The equation of a line through the intersection of lines $x = 0$ and $y = 0$ and through the point $(2, 2)$, is** ***(Average)***

(A) $y = x - 1$ (B) $y = -x$ (C) $y = x$ (D) $y = -x + 2$

29. **A straight the makes an angle of $135°$ with the x-axis and cuts y-axis at a distance -5 from the origin. The equation of the line is** ***(Average)***

(A) $2x + y + 5 = 0$ (B) $x + 2y + 3 = 0$

(C) $x + y + 5 = 0$ (D) $x + y + 3 = 0$

30. **The equation of the line which cuts off an intercept 3 units on OX and an intercept -2 unit on OY, is** ***(Average)***

(A) $\frac{x}{2} - \frac{y}{3} = 1$ (B) $\frac{x}{3} + \frac{y}{2} = 1$ (C) $\frac{x}{2} + \frac{y}{3} = 1$ (D) $\frac{x}{3} - \frac{y}{2} = 1$

31. **If the intercept made by the line between the axis is bisected at the point (5, 2), then its equation is** ***(Average)***

(A) $5x + 2y = 20$ (B) $2x - 5y = 20$

(C) $5x - 2y = 20$ (D) $2x + 5y = 20$

32. **Equation of the straight line making equal intercepts on the axes and passing through the point $(2,4)$ is** *(Average)*

(A) $4x-y-4=0$ (B) $2x+y-8=0$

(C) $x+y-6=0$ (D) $x+2y-10=0$

General Form of Equation of Line

33. **The values of k for which the line $(k-3)x-(4-k^2)y+k^2-7k+6=0$ is parallel to the y-axis** *(Average)*

(A) 4 (B) ± 2 (C) 3 (D) 6, 1.

34. **The values of k for which the line $(k-3)x-(4-k^2)y+k^2-7k+6=0$ is parallel to the x-axis,** *(Average)*

(A) 4 (B) ± 2 (C) 3 (D) 6, 1.

35. **The values of k for which the line $(k-3)x-(4-k^2)y+k^2-7k+6=0$ is passing through the origin.** *(Average)*

(A) 4 (B) ± 2 (C) 3 (D) 6, 1.

36. **Perpendicular distance from the origin to line $\sqrt{3}x+y+k=0$ is 5 units , then k is** *(Average)*

(A) ± 6 (B) 0 (C) ± 5 (D) ± 10

37. **The x-intercept of the line $3x-4y+10=0$ is** *(Easy)*

(A) $\frac{5}{2}$ (B) $-\frac{10}{3}$ (C) $\frac{3}{4}$ (D) 2.

38. **The distance of the point $(-1,1)$ from the line $12(x+6)=5(y-2)$.** *(Average)*

(A) 13 (B) 5 (C) $\frac{55}{13}$ (D) $\frac{60}{13}$.

39. **The distance between the lines $3x-4y+7=0$ and $3x-4y+5=0$ is** *(Easy)*

(A) $\frac{2}{5}$ (B) $\frac{5}{2}$ (C) $\frac{12}{25}$ (D) $\frac{60}{13}$

40. **Equation of the line passing through (1,2) and parallel to $y=3x-1$ is** *(Easy)*

(A) $y+2=x+1$ (B) $y+2=3(x+1)$

(C) $y-2=3(x-1)$ (D) $y-2=x-1$

41. **The equation of the straight line passing through the point $(1,2)$ and perpendicular to the line $x+y+1=0$ is** *(Average)*

(A) $y-x+1=0$ (B) $y-x-1=0$

(C) $y-x+2=0$ (D) $y-x-2=0$

42. **The 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**

Statement I: Parallel if $\frac{a_1}{a_2} = \frac{b_1}{b_2}$ ***(Easy)***

Statement II: Perpendicular if $a_1a_2 - b_1b_2 = 0$

(A) Both I and II are true (B) only I is true

(C) only II is true (D) Both I and II are false

43. **A line passes through $(2, 2)$ and perpendicular to the line $3x + y = 3$. It's y-intercept is** ***[KCET 2015, 2023] (Average)***

(A) $\frac{1}{3}$ (B) $\frac{2}{3}$ (C) $\frac{4}{3}$ (D) 1

44. **If the straight lines $2x + 3y - 3 = 0$ and $x + ky + 7 = 0$ are perpendicular, then the value of k is** ***[KCET 2016] (Average)***

(A) $\frac{2}{3}$ (B) $\frac{3}{2}$ (C) $-\frac{2}{3}$ (D) $-\frac{3}{2}$

45. **Equation of line passing through the point $(1, 2)$ and perpendicular to the line $y = 3x - 1$ is** ***[KCET 2017] (Easy)***

(A) $x + 3y - 7 = 0$ (B) $x + 3y + 7 = 0$ (C) $x + 3y = 0$ (D) $x - 3y = 0$

46. **The equation of the line parallel to the line $3x - 4y + 2 = 0$ and passing through $(-2, 3)$ is** ***[KCET 2018] (Easy)***

(A) $3x - 4y + 18 = 0$ (B) $3x - 4y - 18 = 0$

(C) $3x + 4y + 18 = 0$ (D) $3x + 4y - 18 = 0$

47. **The two lines $lx + my = n$ and $l'x + m'y = n'$ are perpendicular if** ***[KCET 2020] (Average)***

(A) $lm' + ml' = 0$ (B) $ll' + mm' = 0$ (C) $lm' = ml'$ (D) $lm + l'm' = 0$

48. **The equation of straight line which passes through the point $(a\cos^3\theta, a\sin^3\theta)$ and perpendicular to $x\sec\theta + y\operatorname{cosec}\theta = a$ is** ***[KCET 2021] (Difficult)***

(A) $\frac{x}{a} + \frac{y}{a} = a\cos\theta$ (B) $x\cos\theta - y\sin\theta = a\cos 2\theta$

(C) $x\cos\theta + y\sin\theta = a\cos 2\theta$ (D) $x\cos\theta - y\sin\theta = -a\cos 2\theta$

49. **If the straight line $2x - 3y + 17 = 0$ is perpendicular to the line passing through the point $(7, 17)$ and $(15, \beta)$, then β equals** ***[KCET 2022] (Average)***

(A) -5 (B) 5 (C) 29 (D) -29

50. **The angle between the line $x + y = 3$ and the line joining the points $(1, 1)$ and $(-3, 4)$ is** ***[KCET 2024] (Average)***

(A) $\tan^{-1}(7)$ (B) $\tan^{-1}\left(-\frac{1}{7}\right)$ (C) $\tan^{-1}\left(\frac{1}{7}\right)$ (D) $\tan^{-1}\left(\frac{2}{7}\right)$

51. **A line passes through $(-1,-3)$ and perpendicular to $x+6y=5$. Its x intercept is**

[KCET 2025] (Average)

(A) $\frac{1}{2}$ (B) -2 (C) 2 (D) $-\frac{1}{2}$

52. **The line L_2 which passes through $(3,-1)$ divides the line L_1 joining the two points $(-1,2)$ and $(3,6)$ in the ratio $1:3$ internally, then the equation of L_2 is**

[KCET 2026] (Difficult)

(A) $x-3y-6=0$ (B) $x-y+3=0$

(C) $4x+3y-9=0$ (D) $4x+3y+9=0$

53. **A line L is perpendicular to the line $5x-y=1$ and the area of the triangle formed by the line L and coordinate axes is 5. The equation of the line L is** ***(Average)***

(A) $x+5y=\pm5$ (B) $x-5y=5\sqrt{2}$ (C) $x-5y=5$ (D) $x+5y=\pm5\sqrt{2}$

54. **The equation of the straight line passing through the point $(3,2)$ and perpendicular to the line $y=x$ is** ***(Average)***

(A) $x-y=5$ (B) $x+y=5$ (C) $x+y=1$ (D) $x-y=1$

55. **If the coordinates of the points A,B,C be $(-1,5),(0,0)$ and $(2,2)$ respectively and D be the middle point of BC, then the equation of the perpendicular drawn from B to the line AD is** ***(Difficult)***

(A) $x+2y=0$ (B) $2x+y=0$ (C) $x-2y=0$ (D) $2x-y=0$

56. **A line passes through the point of intersection of $2x+y=5$ and $x+3y+8=0$ and parallel to the line $3x+4y=7$ is** ***(Average)***

(A) $3x+4y+3=0$ (B) $3x+4y=0$ (C) $4x-3y+3=0$ (D) $4x-3y=3$

57. **If the equation $y=mx+c$ and $x\cos\alpha+y\sin\alpha=p$ represents the same straight line, then** ***(Difficult)***

(A) $p=c\sqrt{1+m^2}$ (B) $c=p\sqrt{1+m^2}$

(C) $cp=\sqrt{1+m^2}$ (D) $p^2+c^2+m^2=1$

58. **Equation of line passing through $(1,2)$ and perpendicular to $3x+4y+5=0$ is** ***(Average)***

(A) $3y=4x-2$ (B) $3y=4x+3$ (C) $3y=4x+4$ (D) $3y=4x+2$

59. **The equations of the lines through the origin making an angle of 60^o with the line $x+y\sqrt{3}+3\sqrt{3}=0$ are** ***(Average)***

(A) $y=0, x-y\sqrt{3}=0$ (B) $x=0, x-y\sqrt{3}=0$

(C) $x=0, x+y\sqrt{3}=0$ (D) $y=0, x+y\sqrt{3}=0$

60. **Equation of a line passing through $(1,-2)$ and perpendicular to the line $3x-5y+7=0$ is** ***(Average)***

(A) $5x+3y+1=0$ (B) $3x+5y+1=0$

(C) $5x-3y-1=0$ (D) $3x-5y+1=0$

61. **If the slope of a line passing through the point $A(3,2)$ be $\frac{3}{4}$, then the points on the line which are 5 units away from A, are** ***(Difficult)***

(A) $(6,6),\ (0,-2)$ (B) $(7,5),\ (-1,-1)$

(C) $(5,7),\ (-1,-1)$ (D) $(7,7),\ (1,1)$

62. **The acute angle between the lines $x=3$ and $y=\sqrt{3}x+9$ is** ***(Easy)***

(A) 30° (B) 60° (C) 45° (D) 90°

63. **Angle between the lines $\frac{x}{a}+\frac{y}{b}=1$ and $\frac{x}{a}-\frac{y}{b}=1$ is** ***(Difficult)***

(A) $2\tan^{-1}\frac{b}{a}$ (B) $\tan^{-1}\frac{2ab}{a^2+b^2}$ (C) $\tan^{-1}\frac{a^2-b^2}{a^2+b^2}$ (D) None of these

64. **The angle between the two lines $y-2x=9$ and $x+2y=-7$, is** ***(Average)***

(A) 60° (B) 30° (C) 90° (D) 45°

65. **If the lines $y=(2+\sqrt{3})x+4$ and $y=kx+6$ are inclined at an angle 60° to each other, then the value of k will be** ***(Average)***

(A) 1 (B) 2 (C) -1 (D) -2

66. **If θ is the acute angle between the lines $a_1x+b_1y+c_1=0$ and $a_2x+b_2y+c_2=0$, then $\tan\theta$ is** ***(Average)***

(A) $\left|\frac{a_1b_2-a_2b_1}{a_1a_2+b_1b_2}\right|$ (B) $\left|\frac{a_1a_2+b_1b_2}{a_1b_2-a_2b_1}\right|$ (C) $\left|\frac{a_1b_1-a_2b_2}{a_1a_2+b_1b_2}\right|$ (D) $\left|\frac{a_1b_1+a_2b_2}{a_1a_2-b_1b_2}\right|$

67. **The angle between the straight lines $x-y\sqrt{3}=5$ and $\sqrt{3}x+y=7$ is** ***(Average)***

(A) 90° (B) 60° (C) 75° (D) 30°

68. **The length of the perpendicular from the point (b,a) to the line $\frac{x}{a}-\frac{y}{b}=1$, is** ***(Average)***

(A) $\left|\frac{a^2-ab+b^2}{\sqrt{a^2+b^2}}\right|$ (B) $\left|\frac{b^2-ab-a^2}{\sqrt{a^2+b^2}}\right|$ (C) $\left|\frac{a^2+2ab-b^2}{\sqrt{a^2+b^2}}\right|$ (D) None of these

69. **The distance of the point of intersection of the lines $2x-3y+5=0$ and $3x+4y=0$ from the line $5x-2y=0$ is** ***(Difficult)***

(A) $\frac{130}{17\sqrt{29}}$ (B) $\frac{13}{7\sqrt{29}}$ (C) $\frac{130}{17}$ (D) None of these

70. **The vertex of an equilateral triangle is $(2,-1)$ and the equation of its base in $x+2y=1$. The length of its sides is** ***(Difficult)***

(A) $\frac{3}{2\sqrt{15}}$ (B) $\frac{2}{\sqrt{15}}$ (C) $\frac{4}{3\sqrt{3}}$ (D) $\frac{3}{\sqrt{5}}$

71. **The length of the perpendicular drawn from origin upon the straight line $\frac{x}{3}-\frac{y}{4}=1$ is** ***(Average)***

(A) $2\frac{2}{5}$ (B) $3\frac{1}{5}$ (C) $4\frac{2}{5}$ (D) $3\frac{2}{5}$

72. **The distance of the point $(-2,3)$ from the line $x-y=5$ is** ***(Easy)***

(A) $5\sqrt{2}$ (B) $2\sqrt{5}$ (C) $3\sqrt{5}$ (D) $5\sqrt{3}$

73. **Distance between the lines $5x+3y-7=0$ and $15x+9y+14=0$ is** ***(Average)***

(A) $\frac{35}{\sqrt{34}}$ (B) $\frac{1}{3\sqrt{34}}$ (C) $\frac{35}{3\sqrt{34}}$ (D) $\frac{35}{2\sqrt{34}}$

74. **The length of perpendicular from the point $(a\cos\alpha, a\sin\alpha)$ upon the straight line $y=x\tan\alpha+c, c>0$ is** ***(Difficult)***

(A) $c\cos\alpha$ (B) $c\sin^2\alpha$ (C) $c\sec^2\alpha$ (D) $c\cos^2\alpha$

75. **Distance between the two parallel lines $y=2x+7$ and $y=2x+5$ is** ***(Easy)***

(A) $\frac{\sqrt{5}}{2}$ (B) $\frac{2}{5}$ (C) $\frac{2}{\sqrt{5}}$ (D) $\frac{1}{\sqrt{5}}$

76. **The foot of the coordinates drawn from $(2,4)$ to the line $x+y=1$ is** ***(Average)***

(A) $\left(\frac{1}{3},\frac{3}{2}\right)$ (B) $\left(-\frac{1}{2},\frac{3}{2}\right)$ (C) $\left(\frac{4}{3},\frac{1}{2}\right)$ (D) $\left(\frac{3}{4},-\frac{1}{2}\right)$

77. **The image of a point $A(3,8)$ in the line $x+3y-7=0$, is** ***(Difficult)***

(A) (-1,-4) (B) (-3, -8) (C) (1,-4) (D) (3,8)

78. **If $(-2,6)$ is the image of the point $(4,2)$ with respect to line $L=0$, then $L=$** ***(Difficult)***

(A) $3x-2y+5$ (B) $3x-2y+10$ (C) $2x+3y-5$ (D) $6x-4y-7$

79. **The triangle formed by the lines $x+y-4=0, 3x+y=4, x+3y=4$ is** ***(Difficult)***

(A) Isosceles (B) Equilateral (C) Right-angled (D) None of these

80. **The area of the triangle formed by the line $x\sin\alpha+y\cos\alpha=\sin 2\alpha$ and the coordinates axes is** ***(Difficult)***

(A) $\sin 2\alpha$ (B) $\cos 2\alpha$ (C) $2\sin 2\alpha$ (D) $2\cos 2\alpha$

STRAIGHT LINES									
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
B	A	D	C	C	D	D	B	D	A
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
C	C	B	B	D	B	B	A	D	D
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
C	A	A	B	A	A	B	C	C	D
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
D	C	B	C	D	D	B	B	A	C
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
B	B	C	C	A	A	B	C	B	C
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
D	C	D	B	C	A	B	D	B	A
61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**
B	A	A	C	C	A	D	B	A	A
71	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**
A	A	C	A	C	B	A	A	A	A