

STRAIGHT LINES

Episode :39

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1) The distance between the points $(a \cos r, a \sin r)$ and $(a \cos s, a \sin s)$

is

a) $a \cos\left(\frac{r-s}{2}\right)$ b) $2a \cos\left(\frac{r-s}{2}\right)$ c) $a \sin\left(\frac{r-s}{2}\right)$ d) $2a \sin\left(\frac{r-s}{2}\right)$

Ans:d

2) The coordinates of the join of trisection of the points $(-2,3)$, $(3,-1)$ nearer to $(-2,3)$ is

a) $\left(-\frac{1}{3}, \frac{5}{3}\right)$ b) $\left(\frac{4}{3}, \frac{1}{3}\right)$ c) $\left(-\frac{3}{4}, 2\right)$ d) $\left(\frac{1}{3}, \frac{5}{3}\right)$

Ans: a

3) Area of the triangle made by the line $4x + y + 1 = 0$ with the coordinate axes is

a) $\frac{1}{8}$ b) $\frac{1}{4}$ c) $\frac{1}{2}$ d) $\frac{1}{16}$

Ans: a

4) The angles of the triangle formed by the lines $x + y = 0$, $x - y = 0$ and $x = 7$ are (in degrees)

a) 30,60,70 b) 60,60,60 c) 45,45,90 d) 100,50,30

Ans: c

5) If the distance between the lines $y = mx + c_1$, $y = mx + c_2$ is $|c_1 - c_2|$. then 'm' is:

- a) 0 b) -1 c) 1 d) 2

Ans: a

6) The area bounded by the curves $x + 2|y| = 1$ and $x = 0$ is:

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

Ans: b

6) The area enclosed by the curve $|x| + |y| = 1$ is :

- a) 2 b) 1 c) 3 d) 7

Ans: a

7) A straight line through P(1,2) is such that its intercept between the axes is bisected at P. Its equation is:

- a) $X + 2y = 5$ b) $x - y + 1 = 0$ c) $x + y - 3 = 0$ d) $2x + y - 4 = 0$

Ans: d

8) If lines $4x + 3y = 1$, $y = x + 5$ and $5y + bx = 3$ are concurrent then $b = ?$

- a) 1 b) 3 c) 6 d) 0

Ans: c

10) The locus of the mid point of the intercept of the line $x \cos A + y \sin A = p$ between coordinate axes is:

- a) $x^{-2} + y^{-2} = 4p^{-2}$ b) $x^{-2} + y^{-2} = p^{-2}$ c) $x^2 + y^2 = 4p^{-2}$ d) $x^2 + y^2 = p^2$

Ans: a

11) The locus of a point which moves so that its distance from x-axis is double of its distance from y-axis is :

- a) $X = 2y$ **b) $y=2x$** c) $x=5y+1$ d) $y=2x+3$

Ans: b

12) Angle between the lines $\frac{x}{a} \pm \frac{y}{b} = 1$ is :

- a) $\tan^{-1}\left(\frac{b}{a}\right)$ **b) $2 \tan^{-1}\left(\frac{b}{a}\right)$** c) $\tan^{-1}\left(\frac{b+a}{b}\right)$ d) $2 \tan^{-1}\left(\frac{a}{b}\right)$

Ans: b

13) The equation to the straight line passing through the point of intersection of the lines $5x-6y-1=0$ and $3x+2y+5=0$ and perpendicular to the line $3x-5y+11=0$ is:

- a) $5x + 3y + 8 = 0$** b) $3x-5y+8=0$
c) $5x+3y+11=0$ d) $3x-5y+11=0$

Ans: a

14) Line $x+2y-8=0$ is the perpendicular bisector of line AB. If B has coordinates (3,5) then the coordinates of A are:

- a) (2,1) b) (1,2) c) (2,2) **d) (1,1)**

Ans:d

15) The ratio in which the line $y-x+2 = 0$ divides the line joining (3,-1) and (8,9) is

- a) 2:3** b) 3:2 c) -2:3 d) - 3:2

Ans:a

16) A and B are two fixed points. The locus of a point P such that $\angle APB$ is a right angle, is

- a) $x^2 + y^2 = a^2$ b) $x^2 - y^2 = a^2$ c) $2x^2 + y^2 = a^2$ d) $x^2 + 2y^2 = a^2$

Ans:a

17) The equation of a straight line passing through (-3,2) and cutting an intercept equal in magnitude but opposite in sign from the axes is

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

Ans:b

18) The points (3,3), (h,0) and (0,k) are collinear if

- a) $\frac{1}{h} + \frac{2}{k} = \frac{1}{3}$ b) $\frac{1}{k} - \frac{1}{h} = \frac{1}{3}$ c) $\frac{1}{h} + \frac{1}{k} = \frac{1}{3}$ d) $\frac{1}{h} - \frac{1}{k} = \frac{1}{3}$

Ans:c

19) The reflection of the point (6,8) in the line $x - y = 0$ is

- a) (6,8) b) (-6,8) c) (-8, -6) d) (8,6)

Ans:d

20) A line is of length 10 units and one end is at (2,-3). If the abscissa of the other end is 10, then its ordinate is

- a) 2,7 b) 7,2 c) -3,9 d) -9,3

Ans:d

21) The equation of the straight line which is perpendicular to $y = x$ and passes through (3,2) is

- a) $x - y = 5$ b) $x + y = 5$ c) $x + y = 1$ d) $x - y = 1$

Ans:b

22) The inclination of the straight line passing through the point (-3,6) and the mid point of the line joining the point (4,-5) and (-2,9) is

- a) $\frac{f}{4}$ b) $\frac{f}{6}$ c) $\frac{f}{3}$ d) $\frac{3f}{4}$.

Ans:d

23) Three points (0,0), (3, $\sqrt{3}$), (3, }) form an equilateral triangle.

Then } =

- a) 2 b) -3 c) -4 d) $-\sqrt{3}$

Ans:d

24) The point (22,23) divides the join of P(7,5) and Q externally in the ratio 3:5, then coordinates of Q are

- a) (3,7) b) (-3,7) c) (3,-7) d) (-3,-7)

Ans:d

25) The line $\frac{x}{a} - \frac{y}{b} = 1$ cuts the x - axis at P. The equation of the line through P and perpendicular to the given line is

- a) $x+y=ab$ b) $x+y=a+b$ c) $ax+by=a^2$ d) $ax - y = a$

Ans:c

26) If (-2,6) is the image of the point (4,2) with respect to the line L=0, then L=

- a) $3x-2y+5=0$ b) $3x-2y+10=0$ c) $2x+3y-5=0$ d) $x-y=0$

Ans:a

27) The equations $ax+by+c=0$ and $dx+ey+f=0$ represent the same straight line iff

- a) $\frac{a}{d} = \frac{b}{e} = \frac{c}{f}$ b) $c = f$ c) $\frac{a}{d} = \frac{b}{e} = \frac{c}{f}$ d) $a = b$.

Ans:c

28) The point (3,2) is reflected in the y-axis and then moved a distance 5 units towards the negative side of y-axis. The coordinate of the point thus obtained are

- a) (3,-3) b) (-3,3) c) (3,3) d) (-3,-3)

Ans:d

29) The point (-4,5) is the vertex of a square and one of its diagonals is $7x-y+8=0$. The equation of the other diagonal is

- a) $7x-y+23=0$ b) $x+7y=31$ c) $x-7y=37$ d) $x+2y-7=0$

Ans:b

30) Slope of any line parallel to y - axis is

- a) 1 b) 0 c) not defined d) -1

Ans:c