BHARAT SCHOOL OF BANKING COORDINATE GEOMETRY

1. What is the distance of point of intersection of straight lines 2x+3y=6 and y=x+7 from origin?

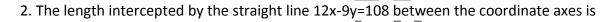
- a) 7
- b) 3
- c) 4
- d) 5

Solution:

Solving
$$2x + 3y = 6$$

And
$$y = x + 7$$
 we get $(x, y) = (-3, 4)$

∴distance from origin =
$$\sqrt{(-3)^2 + 4^2} = 5$$



- a) 12 unit
- b) 18 unit
- c) 15 unit
- d) 9 unit

Solution:

Required intercept =
$$\sqrt{\left(\frac{c}{a}\right)^2 + \left(\frac{c}{b}\right)^2} = \sqrt{\left(\frac{108}{12}\right)^2 + \left(\frac{108}{9}\right)^2}$$

= $\sqrt{81 + 144} = \sqrt{225} = 15$

3. Area of triangle formed by straight lines 4x-3y+4=0,4x+3y-20=0 and x- axis is

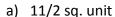
- a) 3 sq. unit
- b) 6 sq. unit
- c) 12 sq. unit
- d) 24 sq. unit

Solution:

Area =1/2*(difference between x-intercept)*(y-coordinate of point of intersection) Required Area =1/2 |5-(-1) |×4=12 square unit

4. Area of triangle formed by straight lines 4x-y=4,3x+2y=14 and y-axis is

BHARAT SCHOOL OF BANKING COORDINATE GEOMETRY



Solution:

Required Area =1/2 |-4-7|×2=11 square unit

5. Ratio of area of triangle formed by straight lines 2x+3y=4 and 3x-y+5=0 with x-axis and y-axis is

- a) 1:2
- b) 2:1
- c) 4:1
- d) None of these

Solution:

Required ratio of Area =
$$\frac{\frac{1}{2} \left| \left(2 - \left(\frac{-5}{3} \right) \right) 2 \right|}{\frac{1}{2} \left| \left(5 - \frac{4}{3} \right) (-1) \right|} = \frac{\frac{22}{3}}{\frac{11}{3}} = \frac{22}{11} = \frac{2}{1}$$

6. Area of quadrilateral formed by straight lines 2x=-5,2y=3,x+1=0 and y+2=0 is

Solution:

Given lines are
$$x = \frac{-5}{2}$$
, $y = \frac{3}{2}$, $x = -1$ and $y = -2$
Required Area $= \frac{1}{2}(b - a)(c - d)$
 $= \frac{1}{2} \left| \left(-1 + \frac{5}{2} \right) \left(\frac{3}{2} + 2 \right) \right| = \frac{1}{2} \times \frac{3}{2} \times \frac{7}{2} = \frac{21}{8}$ square unit

7. Area enclosed by equation |x|+|y|=4 is

Solution:

Area enclosed by
$$|x| + |y| = k$$

Required Area = $2k^2 = 2 \times 4^2 = 32$ square unit.

BHARAT SCHOOL OF BANKING COORDINATE GEOMETRY

- 8. For what value of k system of equations 3x+4y=19, y-x=3 and 2x+3y=k has a solution?
 - a) 11
 - b) -11
 - c) 14
 - d) -14

Solution:

Solving 3x+4y=19 and y-x=3We get x=1,y=4Putting (x,y)=(1,4) in 2x+3y=kWe have $2\times1+3\times4=k \Rightarrow k=14$

- 9. Which of the following pair represent equation of parallel straight lines.
 - a) 2x+3y=4,4x+6y=9
 - b) x+2y=4,2x+y=4
 - c) y=3x+5, x=3y+5
 - d) None of these

Solution:

In option (a) $a1/a2 = b1/b2 \neq c1/c2$. Hence lines given in alternative (a) shows parallel lines.

- 10. For what value of Ksystem of equation x+3y=K and 2x+6y=2K has infinitely many solution?
 - a) K=1
 - b) K=2
 - c) for all real values of
 - d) for no real value of K

Solution:

Here a1/a2 = b1/b2 = c1/c2 is always true. It has infinitely many solution for all real values of K.