1. If the lines given by the equations $x+2y=-3$, $2x+y=3$ and $ax+y=5$ intersect at a point, then find the value of a.

A) $\frac{3}{8}$ B) $\frac{3}{5}$ C) $\frac{8}{3}$ D) 1 E) 0

2. If the lines $x-y+5=0$, $px-y+1=0$ and $3x+4y-6=0$ intersect at a point, then find p.

A) –2 B) –1 C) 1 D) 2 E) 3

3. If the lines $3x+my+2=0$ and $nx-6y+4=0$ coincide, then find the value of the sum $m+n$.

A) –3 B) 3 C) 9 D) 18 E) 20

4. The points A(-4,-1), B(6,5), and C(0,*a*) are given. If the point C is on the line AB, find *a*.

A) $\frac{7}{5}$ B) $\frac{13}{5}$ C) 5 D) $\frac{2}{3}$ E) 3

5. Find the equation of the line that passes through the point A(2,-1) and is perpendicular to the line $y=2x-1$.

A) $y=2x-1$ B) $3y=2x-3$
C) $3x=2y+1$ D) $x+3y-1=0$
E) $x-3y+1=0$

6. Which one of the followings is the equation of the line through A(2,-3) and parallel to x-axis?

A) y = -3x B) –3x + 2y =0 C) x = 2
D) y= -3 E) 2x - 3y = 0

7. Which one of the followings is perpendicular to the line ***x - y = 7*** ?

A) y = 2x – 3 B) x – y = -7 C) x + y =5
D) y = x –7 E) y = x +7

8. Which one of the followings is the equation of the line that passes through the origin and the intersection point of the lines $y=3x-3$ and $y=x-5$?

A) $y=4x$ B) $y=-\frac{2}{3}x$
C) $y=\frac{3}{2}x$ D) $y=6x$
E) $y=-6x$

9. Find the equation of the line, that passes through the intersection of the lines $3x+y-7=0$ and $x-2y=0$ and is parallel to the line $2x-y+3=0$.

A) $y=2x-3$ B) $y=2x+3$
C) $y=-2x+3$ D) $y=2x-1$
E) $y=2x+1$

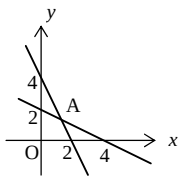
10. If the line $(m-2)x+y-3=0$ is perpendicular to the line $2x-m=0$, then find the intersection point of the lines.

A) (1,4) B) (1,3) C) (2,4) D) (2,3) E) (0,0)

11. If the line that passes through the points A(2,-1) and B(3,-2) is parallel to the line $ax-by+c=0$, then find a^2-b^2.

A) –2 B) –1 C) 0 D) 1 E) 2

12.



Find the distance between the point A and the *y*-axis.

A) $\frac{40}{3}$ B) $\frac{8}{3}$ C) $\frac{51}{7}$ D) $\frac{12}{5}$ E) $\frac{4}{3}$

13. The line *d* passes through the point A(3,-2) and is perpendicular to the line $2x-3y+1=0$. Find the ordinate value of the line *d* at $x=1$.

A) 2 B) 1 C) 0 D) –1 E) –2

14. The points A(-3,4) and B(7,0) are given. Which one of the followings is the equation of the perpendicular bisector of the line segment [AB]?

A) $y-5x+6=0$ B) $2y+5x+6=0$
C) $-2y+5x-6=0$ D) $3y+2x-4=0$
E) $y-2x-1=0$

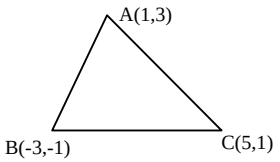
15. What is the distance between $A(-2,2)$ and the line $y=3$?

A) 1 B) 2 C) 3 D) 4 E) 5

16. Let A be the nearest point of the line $3x-4y=0$ to the point P(0,5). What is the abcissa (x) of the point A ?

A) 7/5 B) 11/5 C) 12/5 D) 4/3 E) 5/2

17.



Find the distance between the point C and the line AB.

A) $\sqrt{5}$ B) $2\sqrt{5}$ C) $3\sqrt{2}$ D) $4\sqrt{5}$ E) $5\sqrt{5}$

18. If the distance between the point P(m,2m) and the line $12x+5y=1$ is 5 units, then what is the value of m?

A) $\frac{43}{11}$ B) -3 C) $\frac{-65}{22}$ D) 5 E) 3

19. Which one of the followings is the radius of the circle, that is tangent to the parallel lines $3x-4y+5=0$ and $8y-6x+12=0$?

A) $\frac{11}{5}$ B) $\frac{6}{5}$ C) $\frac{5}{6}$ D) $\frac{11}{10}$ E) $\frac{10}{11}$

20. The two lines given by the equations $\frac{x}{2}+\frac{y}{6}+1=0$ and $6x+2y+c=0$ are parallel. If the distance between these lines is $\sqrt{10}$ cm, then what is the sum of the possible values of c?

A) 18 B) 20 C) 24 D) 32 E) 40

21. Given that $O(0,0)$, $A(4,8)$ and $B(-1,3)$. What is $m(\hat{AOB})$ in degrees ?

A) 15 B) 30 C) 45 D) 60 E) 75

22. Which of the followings is the angle bisector of the lines $y=x$ and $y=-x$?

A) $x=0$ B) $y=x-1$ C) $y=1-x$
D) $y=1$ E) $x+y=0$

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

A) 15 B) 30 C) 45 D) 60 E) 75