

Mathematics

1. The equation of the line parallel to $5x - 2y - 3 = 0$ and passing through the point $(-1, 4)$ is

- | | | | |
|---|--------------------|---|--------------------|
| A | $5x - 2y - 13 = 0$ | B | $2x - 5y + 13 = 0$ |
| C | $5x - 2y + 13 = 0$ | D | $2x + 5y + 13 = 0$ |

2. The direction cosines of Y-axis are

- | | | | |
|---|--------------|---|-------------|
| A | $(1, 1, 0)$ | B | $(0, 1, 0)$ |
| C | $(1, -1, 0)$ | D | $(0, 0, 1)$ |

3. The sum of the square of the first n natural numbers is

- | | | | |
|---|--------------------------|---|--------------------------|
| A | $\frac{n(n-1)(2n+1)}{6}$ | B | $\frac{n(n+1)(2n-1)}{6}$ |
| C | $\frac{n(n+1)(2n+1)}{6}$ | D | $\frac{n(n-1)(2n-1)}{6}$ |

4. The area of the triangle with vertices $(0, 2)$, $(4, 0)$ and $(0, -2)$ is

- | | | | |
|---|---------|---|---------------|
| A | 8 unit | B | 16 unit |
| C | 12 unit | D | none of these |

5. The equation $x^2 - y^2 - 6x + 2y + 7 = 0$ represents a

- | | | | |
|---|---------|---|-----------|
| A | circle | B | parabola |
| C | ellipse | D | hyperbola |

6. The value of $\int_1^2 \frac{1}{x} dx$ is

- | | | | |
|---|-----------------|---|---------------|
| A | 0 | B | $\log 2$ |
| C | $\log \sqrt{3}$ | D | None of these |

7. The volume of a spherical shell with radii 5 and 4 is

- | | | | |
|---|---------------------|---|---------------------|
| A | $\frac{244}{3} \pi$ | B | $\frac{500}{3} \pi$ |
| C | $\frac{256}{3} \pi$ | D | None of these |

8. The center of the circle $x^2 + y^2 - 12x + 4y - 9 = 0$ is

- | | | | |
|---|-----------|---|---------------|
| A | $(-6, 2)$ | B | $(6, -2)$ |
| C | $(6, 2)$ | D | None of these |

9. The angle made by the line $x + y = 1$ with the positive direction of the X-axis is

- | | | | |
|---|-------------|---|-------------|
| A | 45° | B | 120° |
| C | 150° | D | 135° |

10. Let $x^2 + y^2 - 4x + 2y - 4 = 0$ be a circle. The point $(0,0)$ lies

- | | | | |
|---|-------------------|---|--------------------|
| A | inside the circle | B | outside the circle |
| C | on the circle | D | None of these |

11. The reflection of the origin with respect to the line $x + y = 1$ is

- | | | | |
|---|---------|---|-----------|
| A | $(1,1)$ | B | $(-1,-1)$ |
| C | $(2,2)$ | D | $(0,0)$ |

12. The vertex of the parabola $y^2 - 4x - 8 = 0$

- | | | | |
|---|----------|---|---------------|
| A | $(2,0)$ | B | $(0,2)$ |
| C | $(0,-2)$ | D | None of these |

13. When two circles touches externally to each other?

- A Distance between the centers is greater than the sum of their radius.
- B Distance between the centers is less than the sum of their radius.
- C Distance between the centers is equal to the sum of their radius.
- D None of these

14. The displacement of a moving particle is given by $s = 8t^2 + 1$, then its velocity at time $t = 2$ sec is

- | | | | |
|---|----------------|---|---------------|
| A | 23.33 unit/sec | B | 32 unit/sec |
| C | 33 unit/sec | D | None of these |

15. The value of $\lim_{x \rightarrow \frac{\pi}{4}} \frac{\sin(x - \frac{\pi}{4})}{x - \frac{\pi}{4}}$ is

- | | | | |
|---|---|---|---------------|
| A | 0 | B | $\frac{1}{2}$ |
| C | 1 | D | None of these |

16. The general solution of $\cos x = 0$ is

- | | | | |
|---|-----------------------|---|---------------|
| A | $\frac{n\pi}{2}$ | B | $n\pi$ |
| C | $\frac{(2n+1)\pi}{2}$ | D | None of these |

17. The degree of the differential equation $1 + \left(\frac{dy}{dx}\right)^2 = \frac{d^2y}{dx^2}$ is

- | | | | |
|---|---------------|---|---|
| A | 1 | B | 2 |
| C | $\frac{1}{2}$ | D | 4 |

18. If $z = -1 - i$, then the value of $\text{Arg}(z)$ is

- | | | | |
|---|------------------|---|------------------|
| A | $\frac{\pi}{4}$ | B | $\frac{3\pi}{4}$ |
| C | $\frac{5\pi}{4}$ | D | None of these. |

19. The geometric mean of two real numbers a and b is

A $\frac{a+b}{2}$

B \sqrt{ab}

C $\frac{1}{a} + \frac{1}{b}$

D $\frac{2ab}{a+b}$

20. Form a quadratic equation whose roots are (6,5).

A $x^2 + 11x - 30 = 0$

B $x^2 - 11x + 30 = 0$

C $x^2 - 11x - 30 = 0$

D $x^2 + 11x + 30 = 0$

21. The number of combination of n objects taking r at a time is

A nC_r

B nP_r

C n^r

D nr

22. The eccentricity of $\frac{x^2}{16} + \frac{y^2}{9} = 1$ is

A $\frac{4}{\sqrt{7}}$

B $\frac{5}{4}$

C $\frac{\sqrt{7}}{4}$

D $\frac{\sqrt{5}}{4}$

23. If $\frac{\log 64}{\log 16} = x$, then the value of x is

A $\frac{2}{3}$

B $\frac{3}{2}$

C 4

D None of these

24. If a function $f(x)$ is derivable at some points $x = a$ then

A It is not continuous there

B It is continuous there

C The value of the function doesn't exist

D none of these

25. The value of $\int_0^{\frac{\pi}{2}} \frac{\sqrt{\sin x}}{\sqrt{\sin x} + \sqrt{\cos x}} dx$ is

A $\frac{\pi}{4}$

B $\frac{\pi}{2}$

C -1

D 1

26. If $y = \log(\cos x)$ then $\frac{d^2y}{dx^2}$ is

A $\frac{1}{\cos x}$

B $-\operatorname{cosec}^2 x$

C $\sec^2 x$

D None of these

27. The value of $\int_0^1 \frac{\tan^{-1} x}{1+x^2} dx$ is

A $-\frac{\pi^2}{32}$

B $\frac{3\pi}{16}$

C $\frac{\pi^2}{32}$

D None of these

28. If $\frac{dy}{dx} - \frac{1}{\sqrt{1-x^2}} = 0$, then which of the following is true:

A $y - \sin^{-1} x = c$

B $y + \sin^{-1} x = c$

C $x - \sin^{-1} y = c$

D None of these

29. If $\sin x + \cos x = 0$, then x is

A 45°

B 135°

C 125°

D 90°

30. The value of $\cos(A+B)$ is

A $\sin A \cos B + \cos A \sin B$

B $\cos A \cos B - \sin A \sin B$

C $\cos A \cos B + \sin A \sin B$

D $\sin A \cos B - \cos A \sin B$

31. If $f(x) = \begin{cases} 2x-3, & x < 0 \\ 2x+3, & x \geq 0 \end{cases}$, then the function is

A continuous everywhere

B continuous no-where

C continuous except at $x = 0$

D continuous only at $x = 0$

32. The distance of the point $A(2,0)$ from the line $x + y = 1$ is

A 2

B $\frac{1}{\sqrt{2}}$

C $\sqrt{2}$

D None of these

33. The value of $\cos(-315^\circ)$ is

A $\frac{1}{\sqrt{2}}$

B $-\frac{1}{\sqrt{2}}$

C $\frac{\sqrt{3}}{2}$

D $-\frac{\sqrt{3}}{2}$

34. The value of $\tan 1^\circ \tan 2^\circ \tan 3^\circ \dots \tan 88^\circ \tan 89^\circ$ is

A 0

B -1

C 1

D None of these

35. The principle value of the argument of the complex number $\sqrt{3} + i$, ($i = \sqrt{-1}$) is

- | | | | |
|---|-------------------|---|------------------|
| A | $\frac{\pi}{6}$ | B | $\frac{5\pi}{6}$ |
| C | $\frac{11\pi}{6}$ | D | None of these |

36. If α and β be the roots of the equation $x^2 + 5x + 1 = 0$, then the value of $\alpha^2 + \beta^2$ is

- | | | | |
|---|----|---|---------------|
| A | 25 | B | 27 |
| C | 23 | D | None of these |

37. The square root of i is

- | | | | |
|---|-------------------------------|---|-------------------------------|
| A | $\pm \frac{1}{\sqrt{2}}(1+i)$ | B | $\pm \frac{1}{\sqrt{2}}(1-i)$ |
| C | $\pm \frac{1}{2}(1+i)$ | D | $\pm \frac{1}{2}(1-i)$ |

38. If w is the imaginary cube root of unity, then the value of $(1 - w^7 - w^8)(1 - w^4 + w^5)$ is

- | | | | |
|---|------------|---|---------------|
| A | 0 | B | -4 |
| C | -4ω | D | None of these |

39. The value of the determinant $A = \begin{vmatrix} \cos x & \sin x \\ -\sin x & \cos x \end{vmatrix}$ is

- | | | | |
|---|---|---|-----------------|
| A | 1 | B | -1 |
| C | 0 | D | $\sin x \cos x$ |

40. In how many ways can the result of three successive football matches between Brazil and Argentina be decided?

- | | | | |
|---|----|---|----|
| A | 9 | B | 3 |
| C | 27 | D | 81 |

41. The value of $\int_{-a}^a f(x)dx$, where $f(x)$ is an even function is

- | | | | |
|---|--------------------|---|----------------|
| A | a^2 | B | 0 |
| C | $2\int_0^a f(x)dx$ | D | does not exist |

42. If $A = \begin{pmatrix} 2 & 1 \\ 5 & 3 \end{pmatrix}$ and $B = \begin{pmatrix} 1 & 3 & 0 \\ 2 & 5 & 7 \end{pmatrix}$, then which of the following statement is FALSE:

- | | | | |
|---|-----------------|---|-------------------------|
| A | AB exists | B | BA exists |
| C | A^{-1} exists | D | B^{-1} does not exist |

43. The value of $\log_4 \{\log_{25} 9 \times \log_9 25\}$ is

- | | | | |
|---|---|---|---------------|
| A | 0 | B | 1 |
| C | 2 | D | None of these |

44. The value of $\lim_{x \rightarrow 0} (1+x)^{1/x}$ is

- | | | | |
|---|---|---|---------------|
| A | e | B | $\frac{1}{e}$ |
| C | 1 | D | 0 |

45. In how many ways can five persons be seated around a circular table?

- | | | | |
|---|----|---|-----|
| A | 25 | B | 24 |
| C | 20 | D | 120 |

46. The expression for $\log_e(1+x)$ is

- A $1 - \frac{x}{1!} + \frac{x^2}{2!} - \frac{x^3}{3!} + \dots$
- B $1 - \frac{x}{1} + \frac{x^2}{2} - \frac{x^3}{3} + \dots$
- C $x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \dots$
- D None of these

47. Let $f(x) = \begin{cases} 3x, & 0 \leq x \leq 2 \\ \lambda, & 2 < x \leq 3 \end{cases}$, if $f(x)$ is continuous at $x = 2$ then λ is

- | | | | |
|---|----|---|---|
| A | 3 | B | 0 |
| C | -6 | D | 6 |

48. the 15th term of the series $1 + 4 + 7 + 10 + \dots$ is

- | | | | |
|---|----|---|----|
| A | 46 | B | 45 |
| C | 44 | D | 43 |

49. The value of $\lim_{x \rightarrow 3} \frac{x^3 - 27}{x - 3}$ is

- | | | | |
|---|----------------|---|----|
| A | does not exist | B | 27 |
| C | 0 | D | 9 |

50. If z be any complex number, then $z - \bar{z}$ is

- | | | | |
|---|-------------|---|------------------|
| A | Purely real | B | Purely imaginary |
| C | Zero | D | None of these |

51. How many equations are required to represent a curve in space?

- | | | | |
|---|---|---|---------------|
| A | 1 | B | 2 |
| C | 3 | D | None of these |

52. The ratio of the perimeter to its diameter of a circle is

- | | | | |
|---|--------|---|---------------|
| A | π | B | 2π |
| C | 3π | D | None of these |

53. A coin is tossed four times. In how many different ways can we obtain one head and three tails?

- | | | | |
|---|---|---|---------------|
| A | 1 | B | 2 |
| C | 3 | D | None of these |

54. In how many ways can a committee of eight be chosen from ten individuals?

- | | | | |
|---|--------------|---|---------------|
| A | ${}^{10}P_8$ | B | ${}^{10}C_8$ |
| C | 80 | D | None of these |

55. The distance, s traversed by a particle in a straight line from the origin, at any time t is given by $s = 2t^2 + 3t$. The velocity of the particle at 4 second is

- | | | | |
|---|----|---|---------------|
| A | 19 | B | 44 |
| C | 20 | D | None of these |

56. Find the magnitude of the vector $\hat{a} = 2\hat{i} - 3\hat{j} + \hat{k}$.

- | | | | |
|---|-------------|---|---------------|
| A | $\sqrt{6}$ | B | 14 |
| C | $\sqrt{14}$ | D | None of these |

57. How many seven digits telephone numbers are possible, if only odd digits may be used?

- | | | | |
|---|-----------|---|-----------|
| A | 7P_5 | B | 7C_5 |
| C | 5^7 | D | 7^5 |

58. The total number of subsets of a set having n elements is

- | | | | |
|---|-----------|---|-----------|
| A | n^2 | B | 2^n |
| C | nP_2 | D | nC_2 |

59. The sum of the square of the direction cosines of a Straight line is

- | | | | |
|---|---|---|---------------|
| A | 0 | B | 1 |
| C | 2 | D | None of these |

60. $\int \sec x dx =$

- | | | | |
|---|----------------------------|---|----------------------------|
| A | $\log_e \tan x$ | B | $\log_e (\sec x - \tan x)$ |
| C | $\log_e (\sec x + \tan x)$ | D | $\tan x$ |

61. $\int \left(\frac{e^{\sin^{-1} x}}{\sqrt{1-x^2}} \right) dx$ is

- | | | | |
|---|-----------------------------------|---|-------------------------------|
| A | $e^{\sin^{-1} x}$ | B | $\sin^{-1} x e^{\sin^{-1} x}$ |
| C | $e^{\operatorname{cosec}^{-1} x}$ | D | None of these |

62. If a set A has 3 elements, the total number of functions from A to itself is

- | | | | |
|---|---|---|---------------|
| A | 9 | B | 6 |
| C | 1 | D | none of these |

63. The family of straight lines passing through the origin is represented by the differential equation

A $ydx + xdy = 0$

B $xdy - ydx = 0$

C $x dx + y dy = 0$

D $ydy + xdx = 0$

64. A line makes an angles α, β, γ with the co-ordinate axes ,then $\cos^2 \alpha + \cos^2 \beta + \cos^2 \gamma =$

A 0

B 1

C -1

D none of these

65. A matrix A is invertible (the inverse of a matrix exist) if its determinant value is

A 0

B 1

C non zero

D none of these

66. The sum of the series $2 + 4 + 6 + \dots$ up to 20 terms is

A 440

B 320

C 420

D 340

67. Extreme value of $f(x) = x^2 - x$ is at $x =$

A 0

B $\frac{1}{2}$

C 1

D $-\frac{1}{2}$

68. Maximum possible value of $\sin \theta$ is

A 0

B 1

C -1

D $\frac{\pi}{2}$

69. The tangent to a curve touches it at

A only one point

B two points

C infinite number of points

D none of these

70. If $\lim_{x \rightarrow a} f(x)$ exists then which one of these is true

A $f(x)$ is always continuous at $x = a$

B $f(x)$ is always derivable at $x = a$

C $f(x)$ is always discontinuous at $x = a$

D $f(x)$ is continuous at $x = a$ if $\lim_{x \rightarrow a} f(x) = f(a)$

71. If for $y = f(x)$, $\frac{dy}{dx} = 0$ at $x = 2$ then which one of these is true

A tangent at $x = 2$ to $y = f(x)$ is parallel to X axis

B tangent at $x = 2$ to $y = f(x)$ is parallel to Y axis

C tangent at $x = 2$ to $y = f(x)$ does not exist

D none of these

72. A person can arrange 5 books on a shelf in

- | | | | |
|---|---------|---|----------|
| A | 5 ways | B | 120 ways |
| C | 24 ways | D | 25 ways |

73. The number of three digit numbers formed from the digits 0,1,2,3 is

- | | | | |
|---|----|---|----|
| A | 64 | B | 48 |
| C | 24 | D | 12 |

74. The determinant value of the matrix $A = \begin{bmatrix} 1 & 4 & 8 \\ 0 & 3 & 6 \\ 0 & 2 & 4 \end{bmatrix}$ is

- | | | | |
|---|---|---|----|
| A | 1 | B | -1 |
| C | 0 | D | 12 |

75. If $A = \begin{pmatrix} 2 & 1 \\ 0 & 3 \end{pmatrix}$ and $B = \begin{pmatrix} 5 & 0 \\ 4 & 2 \end{pmatrix}$, then $AB + I =$

- | | | | |
|---|--|---|--|
| A | $\begin{pmatrix} 15 & 12 \\ 2 & 7 \end{pmatrix}$ | B | $\begin{pmatrix} 15 & 2 \\ 12 & 7 \end{pmatrix}$ |
| C | $\begin{pmatrix} 7 & 2 \\ 12 & 15 \end{pmatrix}$ | D | $\begin{pmatrix} 12 & 7 \\ 15 & 2 \end{pmatrix}$ |

76. If $A = \begin{pmatrix} 3 & 5 \\ 5 & 2 \end{pmatrix}$, then which of the following statement is FALSE

- | | | | |
|---|--------------------------------|---|--------------------------------|
| A | A is a symmetric matrix | B | transpose of A is A itself |
| C | A is a anty-symmetric matrix | D | None of these |

77. If $f(x) = x^2$ and $g(x) = e^x$ then which of the following statement is TRUE

- | | |
|---|--|
| A | $f(g(x)) = g(f(x))$ |
| B | $f(g(x)) \neq g(f(x))$ |
| C | $f(g(x))$ and $g(f(x))$ may or may not be same |
| D | None of these |

78. If $f(x) = \sin x$ and $g(x) = \log x$ then the value of $g(f(x))$ at $x = \frac{\pi}{2}$ is

- | | | | |
|---|----|---|---------------|
| A | 0 | B | 1 |
| C | -1 | D | None of these |

79. If $a^x = b$ then $x =$

- | | | | |
|---|-------------|---|---------------|
| A | $\log_a b$ | B | $\log_b a$ |
| C | $\log_e ab$ | D | None of these |

80. If $2A - 3B = I$, where $I = \begin{pmatrix} 1 & 0 \\ 0 & 0 \end{pmatrix}$, $A = \begin{pmatrix} 2x+1 & 3 \\ 6 & 2y-1 \end{pmatrix}$ and $B = \begin{pmatrix} 3 & 2 \\ 4 & 2 \end{pmatrix}$ then

- | | | | |
|---|---------------------|---|---------------------|
| A | $x = 0$ and $y = 2$ | B | $x = 2$ and $y = 0$ |
| C | $x = 2$ and $y = 2$ | D | $x = 0$ and $y = 0$ |

81. If $A = \{x : 0 \leq x \leq 5\}$ and $B = \{x : 2 < x < 7\}$ then $A \cap B =$

- | | | | |
|---|---------------------------|---|---------------------|
| A | $\{x : 2 \leq x \leq 5\}$ | B | $\{x : 2 < x < 5\}$ |
| C | $\{x : 2 < x \leq 5\}$ | D | None of these |

82. If $\vec{a} = 2\vec{i} + 3\vec{j} + \vec{k}$ and $\vec{b} = \vec{i} + 2\vec{j} - 4\vec{k}$ then $\vec{a} \cdot \vec{b} =$

- | | | | |
|---|----|---|---|
| A | 10 | B | 8 |
| C | 6 | D | 4 |

83. $\frac{d}{dx}(\sec^{-1}x)$ is

- | | | | |
|---|---------------------------|---|---------------------------|
| A | $\frac{1}{\sqrt{x^2-1}}$ | B | $\frac{1}{x\sqrt{x^2-1}}$ |
| C | $\frac{-1}{\sqrt{x^2-1}}$ | D | $\frac{x}{\sqrt{x^2-1}}$ |

84. The value of $\sum_{n=0}^{\infty} \frac{1}{n!}$ is

- | | | | |
|---|---------------|---|---------------|
| A | $\frac{1}{e}$ | B | e |
| C | 1 | D | None of these |

85. $\frac{d}{dx}(x^x)$ is

- | | | | |
|---|-------------------|---|----------------------|
| A | $e^{x \log x}$ | B | $\frac{1}{x} \log x$ |
| C | $x^x(1 - \log x)$ | D | $x^x(1 + \log x)$ |

86. Divide the number 15 into three such parts that they may form an A.P., and that the product of the first two parts may be 80. The parts are

- | | | | |
|---|---------|---|---------------|
| A | 2, 5, 8 | B | 1, 5, 9 |
| C | 3, 5, 7 | D | None of these |

87. The equation of Z-axis is

- | | | | |
|---|-------------|---|----------------|
| A | $z = 0$ | B | $x = 0, y = 0$ |
| C | $x = y = z$ | D | None of these |

88. Which term of the G.P., 2, 6, 18, 54... is 1458?

- | | | | |
|---|----------------------|---|----------------------|
| A | 9 th term | B | 8 th term |
| C | 7 th term | D | 6 th term |

89. The value of $\sin^{-1} x + \cos^{-1} x$ is

- | | | | |
|---|-----------------|---|---------------|
| A | 0 | B | π |
| C | $\frac{\pi}{2}$ | D | None of these |

90. If $y = e^x \cos x$ then $\frac{dy}{dx}$ at $x = 0$ is

- | | | | |
|---|----|---|----------------|
| A | -1 | B | 1 |
| C | 0 | D | does not exist |

91. The differential equation $(e^x + 1)dy = (y + 1)e^x dx$ has the solution

- | | | | |
|---|------------------------|---|------------------------|
| A | $y + 1 = c(e^x + 1)$ | B | $(1 + y)(e^x + 1) = c$ |
| C | $(1 + y)(e^x + 2) = c$ | D | $(1 + y)(e^x + 1) = c$ |

92. The domain of $f(x) = \frac{1}{\sqrt{x-4}}$ is

- | | | | |
|---|--------------------|---|----------------------------|
| A | $\{x x \leq 4\}$ | B | $\{x -4 \leq x \leq 4\}$ |
| C | $\{x x > 4\}$ | D | $\{x 0 < x \leq 4\}$ |

93. In a ΔABC , if $a = 18, b = 24, c = 30$ then its area is

- | | | | |
|---|---------------|---|---------------|
| A | 96 sq. units | B | 612 sq. units |
| C | 216 sq. units | D | None of these |

94. What must be the matrix X if $2X + \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} = \begin{pmatrix} 3 & 8 \\ 7 & 2 \end{pmatrix}$?

- | | | | |
|---|---|---|--|
| A | $\begin{pmatrix} 1 & 3 \\ 2 & -1 \end{pmatrix}$ | B | $\begin{pmatrix} 1 & -3 \\ 2 & -1 \end{pmatrix}$ |
| C | $\begin{pmatrix} 2 & 6 \\ 4 & -2 \end{pmatrix}$ | D | $\begin{pmatrix} 2 & -6 \\ 4 & -2 \end{pmatrix}$ |

95. If A and B are two matrices such that A+B and AB are both define, then A and B are

- | | | | |
|---|------------------------------------|---|------------------------|
| A | both null matrices | B | both identity matrices |
| C | both square matrices of same order | D | None of these |

96. The value of $\lim_{x \rightarrow 3} \frac{x-3}{|x-3|}$ is

A 0
C -1

B 1
D does not exist

97. The function $f(x) = x^3$ is

A increasing only in $(0, 1)$
C every where increasing

B decreasing in $(0, 1)$
D every where decreasing

98. The area of the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ in the first quadrant is

A $\frac{\pi}{4ab}$
C $\frac{\pi ab}{4}$

B $\frac{\pi ab}{2}$
D None of these

99. The order of the differential equation $\left(\frac{dy}{dx}\right)^2 + \left(\frac{d^2y}{dx^2}\right)^3 = 0$ is

A 2
C 6

B 3
D 1

100. The value of k for which $3x^2 - 8xy + ky^2 = 0$ represents two perpendicular lines is

A 3
C $-\frac{3}{2}$

B -3
D $-\frac{2}{3}$