CUET 2024

MATHEMATICS ANSWER KEY

Section A (Compulsory)

1. If A and B are symmetric matrices of the same order, then AB – BA is a :

   (1) symmetric matrix (2) zero matrix

   (3) skew symmetric matrix (4) identity matrix

2. If A is a square matrix of order 4 and $|A| = 4$, then $|2A|$ will be :

   (1) 8 (2) 64 (3) 16 (4) 4

3. If $[A]_{3\times2}\,[B]_{x\times y} = [C]_{3\times1}$, then :

   (1) $x = 1, y = 3$ (2) $x = 2, y = 1$ (3) $x = 3, y = 3$ (4) $x = 3, y = 1$

4. If a function $f(x) = x^2 + bx + 1$ is increasing in the interval $[1, 2]$, then the least value of b is :

   (1) 5 (2) 0 (3) -2 (4) -4

5. Two dice are thrown simultaneously. If X denotes the number of fours, then the expectation of X will be :

   (1) $\frac{5}{9}$ (2) $\frac{1}{3}$ (3) $\frac{4}{7}$ (4) $\frac{3}{8}$

6. For the function $f(x) = 2x^3 - 9x^2 + 12x - 5,\ x \in [0, 3]$, match **List-I** with **List-II** :

List-I		List-II	
(A)	Absolute maximum value	(I)	3
(B)	Absolute minimum value	(II)	0
(C)	Point of maxima	(III)	-5
(D)	Point of minima	(IV)	4

Choose the **correct** answer from the options given below :

(1) (A) - (IV), (B) - (II), (C) - (I), (D) - (III)

(2) (A) - (II), (B) - (III), (C) - (I), (D) - (IV)

(3) (A) - (IV), (B) - (III), (C) - (II), (D) - (I)

(4) (A) - (IV), (B) - (III), (C) - (I), (D) - (II)

SPACE FOR ROUGH WORK

$\frac{1}{12} + \frac{2}{12}$

$2\times27 - 9\times9 + 12\times3 - 5$

$54 - 81 + 36 - 5$

$90 - 86$ = 4

$2 - 9 + 12 - 5$

$14 - 14$ = 0

$y' = \log_e t^2$

$y = 2\log_e t$

$y'' = \frac{2(1)}{t} - \frac{1}{t^2}$

7. An objective function $Z = ax + by$ is maximum at points (8, 2) and (4, 6). If $a \geq 0$ and $b \geq 0$ and $ab = 25$, then the maximum value of the function is equal to :

(1) 60

(2) 50

(3) 40

(4) 80

8. The area of the region bounded by the lines $x + 2y = 12, x = 2, x = 6$ and x-axis is :

(1) 34 sq units

(2) 20 sq units

(3) 24 sq units

(4) 16 sq units

9. A die is rolled thrice. What is the probability of getting a number greater than 4 in the first and the second throw of dice and a number less than 4 in the third throw ?

(1) $\frac{1}{3}$

(2) $\frac{1}{6}$

(3) $\frac{1}{9}$

(4) $\frac{1}{18}$

10. The corner points of the feasible region determined by

$x + y \leq 8,\ 2x + y \geq 8,\ x \geq 0,\ y \geq 0$

are A(0, 8), B(4, 0) and C(8, 0). If the objective function Z = ax + by has its maximum value on the line segment AB, then the relation between a and b is :

(1) $8a + 4 = b$

(2) $a = 2b$

(3) $b = 2a$

(4) $8b + 4 = a$

11. If $t = e^{2x}$ and $y = \log_e t^2$, then $\frac{d^2y}{dx^2}$ is :

(1) 0

(2) 4t

(3) $\frac{4e^{2t}}{t}$

(4) $\frac{e^{2t}(4t-1)}{t^2}$

SPACE FOR ROUGH WORK

(0,8) (4,0)
AB
a(0)+b(8)
a(4)+b(0)
$a4 + b6 = a8 + b2$
$a4 + 64 = 0$
$2b = 4a$
$2b = a$
$a + b = 0$
$a = -b$

$= 5 \times 8 + 5 \times 2$
$40 + 10 = 50$
$= 5 \times 4 + 5 \times 6$
$20 + 30 = 50$

x y
0 6
12 0

(2,5) (6,3)
(2,0) (6,0)
$\frac{1}{2} \times 4^2 \times 5 = 10$
$1 \times 4 \times 5 = 10$

P(1) =
(2) =
P(3) =

12. $\int \frac{\pi}{x^{n+1} - x} dx =$

(1) $\frac{\pi}{n} \log_e \left| \frac{x^n - 1}{x^n} \right| + C$

(2) $\log_e \left| \frac{x^n + 1}{x^n - 1} \right| + C$

(3) $\frac{\pi}{n} \log_e \left| \frac{x^n + 1}{x^n} \right| + C$

(4) $\pi \log_e \left| \frac{x^n}{x^n - 1} \right| + C$

13. The value of $\int_0^1 \frac{a - bx^2}{\left(a + bx^2\right)^2} dx$ is :

(1) $\frac{a - b}{a + b}$

(2) $\frac{1}{a - b}$

(3) $\frac{a + b}{2}$

(4) $\frac{1}{a + b}$

14. The second order derivative of which of the following functions is 5^x ?

(1) $5^x \log_e 5$

(2) $5^x (\log_e 5)^2$

(3) $\frac{5^x}{\log_e 5}$

(4) $\frac{5^x}{(\log_e 5)^2}$

15. The degree of the differential equation $\left(1 - \left(\frac{dy}{dx}\right)^2\right)^{3/2} = k \frac{d^2y}{dx^2}$ is :

(1) 1

(2) 2

(3) 3

(4) $\frac{3}{2}$

SPACE FOR ROUGH WORK

$y = 5^x \log_e 5$

$y' = 5^{x-1}$

$5^x (\log_e 5)$

$\frac{5^x}{\log_e 5} \times 5$

$x^2 - x$

$1 - \left(\frac{dy}{dx}\right)^2$

π $i + j + k$

$2i + j + 2k$

$(-i - j - k) \cdot (3, +3$

$-3 - 3 - 3$

-12

Section B1 (Mathematics)

16. Let R be the relation over the set A of all straight lines in a plane such that $l_1 \, R \, l_2 \Leftrightarrow l_1$ is parallel to l_2. Then R is :

(1) Symmetric
(2) An Equivalence relation
(3) Transitive
(4) Reflexive

17. The probability of not getting 53 Tuesdays in a leap year is :

(1) 2/7
(2) 1/7
(3) 0
(4) 5/7

18. The angle between two lines whose direction ratios are propotional to 1, 1, −2 and $(\sqrt{3}-1), (-\sqrt{3}-1), -4$ is :

(1) $\pi/3$
(2) π
(3) $\pi/6$
(4) $\pi/2$

19. If $(\vec{a}-\vec{b})\cdot(\vec{a}+\vec{b}) = 27$ and $|\vec{a}| = 2|\vec{b}|$, then $|\vec{b}|$ is :

(1) 3
(2) 2
(3) 5/6
(4) 6

20. If $\tan^{-1}\left(\dfrac{2}{3^{-x}+1}\right) = \cot^{-1}\left(\dfrac{3}{3^{x}+1}\right)$, then which one of the following is true ?

(1) There is no real value of x satisfying the above equation.
(2) There is one positive and one negative real value of x satisfying the above equation.
(3) There are two real positive values of x satisfying the above equation.
(4) There are two real negative values of x satisfying the above equation.

21. If A, B and C are three singular matrices given by $A = \begin{bmatrix} 1 & 4 \\ 3 & 2a \end{bmatrix}$, $B = \begin{bmatrix} 3b & 5 \\ a & 2 \end{bmatrix}$ and

$C = \begin{bmatrix} a+b+c & c+1 \\ a+c & c \end{bmatrix}$, then the value of abc is :

(1) 15
(2) 30
(3) 45
(4) 90

SPACE FOR ROUGH WORK

$l_1 \| l_1$
$l_1 \| l_2$

$(a+b) = 27$
$(\vec{a}-\vec{b})\cdot(a+b) = 27$
$2b - b \times (2b+b) = 27$
$b \times 3b = 27 \; 9$
$3 \times 3/2 \times 5 \quad 45$

$(a+b)$
$\begin{vmatrix} 1 & 4 \\ 3 & 2a \end{vmatrix}$
$0 = 2a - 12$
$a = 6$

$\begin{vmatrix} 3b & 5 \\ a & 2 \end{vmatrix}$
$6b - 30 = 0$
$b = 30/6$
$b = 5$

$\begin{vmatrix} 11+c & c+1 \\ 6+c & c \end{vmatrix}$
$(11+c)c - (c+1)(6+c)$
$11c + \cancel{c^2} - 6c - \cancel{c^2} - 6$
$10c - 6c - 6$
$4c - 6 = 0$
$c = 6/4 = 3/2$

22. The value of the integral $\int_{\log_e 2}^{\log_e 3} \frac{e^{2x}-1}{e^{2x}+1}\,dx$ is :

(1) $\log_e 3$

(2) $\log_e 4 - \log_e 3$

(3) $\log_e 9 - \log_e 4$

(4) $\log_e 3 - \log_e 2$

23. If $\vec{a}$, $\vec{b}$ and $\vec{c}$ are three vectors such that $\vec{a}+\vec{b}+\vec{c}=\vec{0}$, where $\vec{a}$ and $\vec{b}$ are unit vectors and $|\vec{c}|=2$, then the angle between the vectors $\vec{b}$ and $\vec{c}$ is :

(1) 60°

(2) 90°

(3) 120°

(4) 180°

24. Let [x] denote the greatest integer function. Then match **List-I** with **List-II** :

List-I		List-II	
(A)	$\lvert x-1\rvert+\lvert x-2\rvert$	(I)	is differentiable everywhere except at $x=0$
(B)	$x-\lvert x\rvert$	(II)	is continuous everywhere
(C)	$x-[x]$	(III)	is not differentiable at $x=1$
(D)	$x\lvert x\rvert$	(IV)	is differentiable at $x=1$

Choose the **correct** answer from the options given below :

(1) (A) - (I), (B) - (II), (C) - (III), (D) - (IV)

(2) (A) - (I), (B) - (III), (C) - (II), (D) - (IV)

(3) (A) - (II), (B) - (I), (C) - (III), (D) - (IV)

(4) (A) - (II), (B) - (IV), (C) - (III), (D) - (I)

25. The rate of change (in cm^2/s) of the total surface area of a hemisphere with respect to radius r at $r=\sqrt[3]{1.331}$ cm is :

(1) 66π

(2) 6.6π

(3) 3.3π

(4) 4.4π

26. The area of the region bounded by the lines $\frac{x}{7\sqrt{3}\,a}+\frac{y}{b}=4$, $x=0$ and $y=0$ is :

(1) $56\sqrt{3}\,ab$

(2) 56a

(3) ab/2

(4) 3ab

27. If A is a square matrix and I is an identity matrix such that $A^2=A$, then $A(I-2A)^3+2A^3$ is equal to :

(1) I + A

(2) I + 2A

(3) I − A

(4) A

SPACE FOR ROUGH WORK

$\cos\theta = \frac{|b||c|}{c.b}$

$\cos\theta = \frac{2}{}$

$A(I-2A)^3+2A^3$

$A(I^3-2A^3)+2A^2A$

$A-2A \quad +2AA$

$+2A$

A

28. Match **List-I** with **List-II** :

List-I		List-II	
(A)	Integrating factor of $xdy - (y + 2x^2)dx = 0$	(I)	$\frac{1}{x}$
(B)	Integrating factor of $(2x^2 - 3y)dx = xdy$	(II)	x
(C)	Integrating factor of $(2y + 3x^2)dx + xdy = 0$	(III)	x^2
(D)	Integrating factor of $2xdy + (3x^3 + 2y)dx = 0$	(IV)	x^3

Choose the **correct** answer from the options given below :

(1) (A) - (I), (B) - (III), (C) - (IV), (D) - (II)

(2) (A) - (I), (B) - (IV), (C) - (III), (D) - (II)

(3) (A) - (II), (B) - (I), (C) - (III), (D) - (IV)

(4) (A) - (III), (B) - (IV), (C) - (II), (D) - (I)

29. If the function $f : \mathbb{N} \to \mathbb{N}$ is defined as $f(n) = \begin{cases} n-1, & \text{if } n \text{ is even} \\ n+1, & \text{if } n \text{ is odd} \end{cases}$, then

(A) f is injective

(B) f is into

(C) f is surjective

(D) f is invertible

Choose the **correct** answer from the options given below :

(1) (B) only

(2) (A), (B) and (D) only

(3) (A) and (C) only

(4) (A), (C) and (D) only

30. $\int_0^{\frac{\pi}{2}} \frac{1 - \cot x}{\operatorname{cosec} x + \cos x} dx =$

(1) 0

(2) $\frac{\pi}{4}$

(3) ∞

(4) $\frac{\pi}{12}$

SPACE FOR ROUGH WORK

$2x \frac{dy}{dx} + (3x^2 + 2y) = 0$

x^2 x^{-1+1}

$\frac{1}{x}$ $e^{\log x}$

$2x \frac{(dy)}{dx} + \frac{\cancel{2}y}{2x} = 3x^2$

$e^{\int x}$

31. If the random variable X has the following distribution :

X	0	1	2	otherwise
P(X)	k	2k	3k	0

Match **List-I** with **List-II** :

List-I	List-II
(A) k	(I) $\frac{5}{6}$
(B) $P(X<2)$	(II) $\frac{4}{3}$
(C) $E(X)$	(III) $\frac{1}{2}$
(D) $P(1 \le X \le 2)$	(IV) $\frac{1}{6}$

Choose the **correct** answer from the options given below :

(1) (A) - (I), (B) - (II), (C) - (III), (D) - (IV)

(2) (A) - (IV), (B) - (III), (C) - (II), (D) - (I)

(3) (A) - (I), (B) - (II), (C) - (IV), (D) - (III)

(4) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

32. For a square matrix $A_{n \times n}$

(A) $|\text{adj } A| = |A|^{n-1}$

(B) $|A| = |\text{adj } A|^{n-1}$

(C) $A(\text{adj } A) = |A|$

(D) $|A^{-1}| = \frac{1}{|A|}$

Choose the **correct** answer from the options given below :

(1) (B) and (D) only

(2) (A) and (D) only

(3) (A), (C) and (D) only

(4) (B), (C) and (D) only

SPACE FOR ROUGH WORK

$19 \times 5 = 95$

$K+2K+3K+0=1$

$6K=1$

$K=1/6$

$A^{-1} = \frac{1(\text{Adj}A)}{|A|}$

$K+2K+3K=1$

$6K=1$

$K=1/6$

$2K+3K$

$\frac{2}{6}+\frac{3}{6}=5/6$

33. The matrix $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ is a :

(A) scalar matrix (B) diagonal matrix

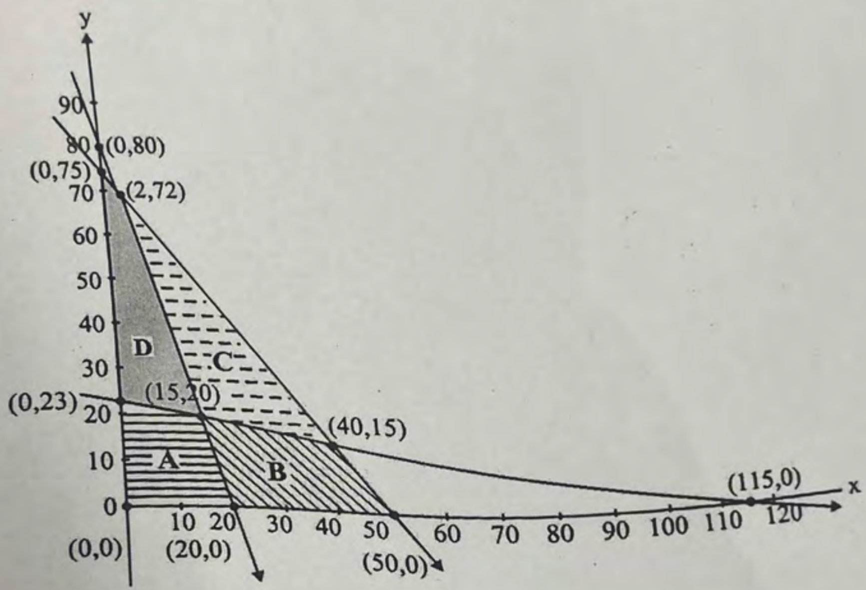
(C) skew-symmetric matix (D) symmetric matrix

Choose the **correct** answer from the options given below :

(1) (A), (B) and (D) only (2) (A), (B) and (C) only

(3) (A), (B), (C) and (D) (4) (B), (C) and (D) only

34. The feasible region represented by the constraints $4x + y \geq 80$, $x + 5y \geq 115$, $3x + 2y \leq 150$, $x, y \geq 0$ of an LPP is



(1) Region A (2) Region B (3) Region C (4) Region D

35. The area of the region enclosed between the curves $4x^2 = y$ and $y = 4$ is :

(1) 16 sq. units (2) $\frac{32}{3}$ sq. units

(3) $\frac{8}{3}$ sq. units (4) $\frac{16}{3}$ sq. units

SPACE FOR ROUGH WORK

$-0 = 0$

x	y
0	80
20	0

x	y
0	23
115	0

$1 \times 2 \times 4 = 2$

$\int 4x^2 - 4$

$\frac{4x^3}{3}$

$x^2 = \frac{\sqrt{y}}{\sqrt{4}} \Rightarrow x = \frac{\sqrt{y}}{2}$

$\int \sqrt{y}/2$

$= \frac{1}{2} \times \frac{y^{3/2}}{2}$

36. $\int e^x\left(\frac{2x+1}{2\sqrt{x}}\right)dx =$

(1) $\frac{1}{2\sqrt{x}}e^x + C$

(2) $-e^x\sqrt{x} + C$

(3) $-\frac{1}{2\sqrt{x}}e^x + C$

(4) $e^x\sqrt{x} + C$

37. If f(x), defined by $f(x) = \begin{cases} kx+1 & \text{if } x \le \pi \\ \cos x & \text{if } x > \pi \end{cases}$ is continuous at $x = \pi$, then the value of k is :

(1) 0

(2) π

(3) $\frac{2}{\pi}$

(4) $-\frac{2}{\pi}$

38. If $P = \begin{bmatrix} -1 \\ 2 \\ 1 \end{bmatrix}$ and $Q = [2 \quad -4 \quad 1]$ are two matrices, then $(PQ)'$ will be :

(1) $\begin{bmatrix} 4 & 5 & 7 \\ -3 & -3 & 0 \\ 0 & -3 & -2 \end{bmatrix}$

(2) $\begin{bmatrix} -2 & 4 & 2 \\ 4 & -8 & -4 \\ -1 & 2 & 1 \end{bmatrix}$

(3) $\begin{bmatrix} 5 & 5 & 2 \\ 7 & 6 & 7 \\ -9 & -7 & 0 \end{bmatrix}$

(4) $\begin{bmatrix} -2 & 4 & 8 \\ 7 & 5 & 7 \\ -8 & -2 & 6 \end{bmatrix}$

SPACE FOR ROUGH WORK

$[\;]_{3}\,[\;]_{1\times 3}$ $PQ = \begin{pmatrix} -2 & 4 & -1 \\ 4 & -8 & 2 \\ 2 & -4 & 1 \end{pmatrix}$ $[3\times 3$

$kx+1 =$

a_{11} a_{12}

30

$\begin{bmatrix} -2 & 4 & 2 \\ 4 & -8 & -4 \\ -1 & 2 & 1 \end{bmatrix}$

39. $\Delta = \begin{vmatrix} 1 & \cos x & 1 \\ -\cos x & 1 & \cos x \\ -1 & -\cos x & 1 \end{vmatrix}$

(A) $\Delta = 2(1-\cos^2 x)$

(B) $\Delta = 2(2-\sin^2 x)$

(C) Minimum value of Δ is 2

(D) Maximum value of Δ is 4

Choose the **correct** answer from the options given below :

(1) (A), (C) and (D) only

(2) (A), (B) and (C) only

(3) (A), (B), (C) and (D)

(4) (B), (C) and (D) only

40. $f(x) = \sin x + \frac{1}{2}\cos 2x$ in $\left[0, \frac{\pi}{2}\right]$

(A) $f'(x) = \cos x - \sin 2x$

(B) The critical points of the function are $x = \frac{\pi}{6}$ and $x = \frac{\pi}{2}$

(C) The minimum value of the function is 2

(D) The maximum value of the function is $\frac{3}{4}$

Choose the **correct** answer from the options given below :

(1) (A), (B) and (D) only

(2) (A), (B) and (C) only

(3) (A), (B), (C) and (D)

(4) (B), (C) and (D) only

41. The direction cosines of the line which is perpendicular to the lines with direction ratios 1, – 2, – 2 and 0, 2, 1 are :

(1) $\frac{2}{3}, -\frac{1}{3}, \frac{2}{3}$

(2) $-\frac{2}{3}, -\frac{1}{3}, \frac{2}{3}$

(3) $\frac{2}{3}, -\frac{1}{3}, -\frac{2}{3}$

(4) $\frac{2}{3}, \frac{1}{3}, \frac{2}{3}$

SPACE FOR ROUGH WORK

42. Let X denote the number of hours you play during a randomly selected day. The probability that X can take values x has the following form, where c is some constant.

$$P(X=x)=\begin{cases}0.1 & , \text{ if } x=0\\ cx & , \text{ if } x=1 \text{ or } x=2\\ c(5-x), & \text{ if } x=3 \text{ or } x=4\\ 0 & , \text{ otherwise}\end{cases}$$

Match **List-I** with **List-II** :

List-I	**List-II**
(A) c	(I) 0.75
(B) $P(X \le 2)$	(II) 0.3
(C) $P(X=2)$	(III) 0.55
(D) $P(X \ge 2)$	(IV) 0.15

Choose the **correct** answer from the options given below :

(1) (A) - (I), (B) - (II), (C) - (III), (D) - (IV)

(2) (A) - (IV), (B) - (III), (C) - (II), (D) - (I)

(3) (A) - (I), (B) - (II), (C) - (IV), (D) - (III)

(4) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

43. If $\sin y = x \sin(a+y)$, then $\frac{dy}{dx}$ is :

(1) $\frac{\sin^2 a}{\sin(a+y)}$

(2) $\frac{\sin(a+y)}{\sin^2 a}$

(3) $\frac{\sin(a+y)}{\sin a}$

(4) $\frac{\sin^2(a+y)}{\sin a}$

44. The unit vector perpendicular to each of the vectors $\vec{a}+\vec{b}$ and $\vec{a}-\vec{b}$, where $\vec{a}=\hat{i}+\hat{j}+\hat{k}$ and $\vec{b}=\hat{i}+2\hat{j}+3\hat{k}$, is :

(1) $\frac{1}{\sqrt{6}}\hat{i}+\frac{2}{\sqrt{6}}\hat{j}+\frac{1}{\sqrt{6}}\hat{k}$

(2) $-\frac{1}{\sqrt{6}}\hat{i}+\frac{1}{\sqrt{6}}\hat{j}-\frac{1}{\sqrt{6}}\hat{k}$

(3) $-\frac{1}{\sqrt{6}}\hat{i}+\frac{2}{\sqrt{6}}\hat{j}+\frac{2}{\sqrt{6}}\hat{k}$

(4) $-\frac{1}{\sqrt{6}}\hat{i}+\frac{2}{\sqrt{6}}\hat{j}-\frac{1}{\sqrt{6}}\hat{k}$

SPACE FOR ROUGH WORK

$P(0) = 0.1$

$P(1 \text{ or } 2) = c(1 \text{ or } 2)$

$P(3 \text{ or } 4) = c(5 - 3 \text{ or } 4)$

$P(\text{others}) = 0$

$1 = 0.1 + c(1) + c(2) + c(5-3) + c(5-4)$

$1 = 0.1 + 3c + 2c + c$

$1 = 0.1 + 6c \quad 6c = 0.9 \quad c = \frac{0.9}{6} \times \frac{1}{10} = 0.16$

45. The distance between the lines $\vec{r} = \hat{i} - 2\hat{j} + 3\hat{k} + \lambda(2\hat{i} + 3\hat{j} + 6\hat{k})$ and $\vec{r} = 3\hat{i} - 2\hat{j} + 1\hat{k} + \mu(4\hat{i} + 6\hat{j} + 12\hat{k})$ is :

(1) $\frac{\sqrt{28}}{7}$ (2) $\frac{\sqrt{199}}{7}$ (3) $\frac{\sqrt{328}}{7}$ (4) $\frac{\sqrt{421}}{7}$

46. If $f(x) = 2\left(\tan^{-1}(e^x) - \frac{\pi}{4}\right)$, then f(x) is :

(1) even and is strictly increasing in $(0, \infty)$
(2) even and is strictly decreasing in $(0, \infty)$
(3) odd and is strictly increasing in $(-\infty, \infty)$
(4) odd and is strictly decreasing in $(-\infty, \infty)$

47. For the differential equation $(x \log_e x)dy = (\log_e x - y)dx$

(A) Degree of the given differential equation is 1.
(B) It is a homogeneous differential equation.
(C) Solution is $2y \log_e x + A = (\log_e x)^2$, where A is an arbitrary constant
(D) Solution is $2y \log_e x + A = \log_e(\log_e x)$, where A is an arbitrary constant

Choose the **correct** answer from the options given below :

(1) (A) and (C) only (2) (A), (B) and (C) only
(3) (A), (B) and (D) only (4) (A) and (D) only

48. There are two bags. Bag-1 contains 4 white and 6 black balls and Bag-2 contains 5 white and 5 black balls. A die is rolled, if it shows a number divisible by 3, a ball is drawn from Bag-1, else a ball is drawn from Bag-2. If the ball drawn is not black in colour, the probability that it was not drawn from Bag-2 is :

(1) $\frac{4}{9}$ (2) $\frac{3}{8}$ (3) $\frac{2}{7}$ (4) $\frac{4}{19}$

49. Which of the following ***cannot*** be the direction ratios of the straight line $\frac{x-3}{2} = \frac{2-y}{3} = \frac{z+4}{-1}$?

(1) 2, −3, −1 (2) −2, 3, 1
(3) 2, 3, −1 (4) 6, −9, −3

SPACE FOR ROUGH WORK

$\frac{dy}{dx} = \frac{\log_e x - y}{x \log_e x}$

B_1 - 4 W, 6 B
B_2 - 5 W, 5 B
A → Not b

$P(1) = 2/6$ $P(B_1) = 4/10$
$P(2) = 4/6$ $P(B_2) = 5/10$

$a_1 - a_2$
$-2 - 0 - 2$
$(-2i - 2k) \cdot (24$
$(0i) - (24 - 24$ $0j + (12$

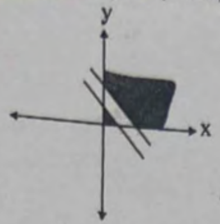
$P(1/B_1) = \frac{2/6 \times 4/10}{2/6 \times 4/10 + 4/6 \times 5/10}$

$\frac{4}{30} + \frac{10}{30}$, $\frac{14}{30}$

50. Which one of the following represents the correct feasible region determined by the following constraints of an LPP ?

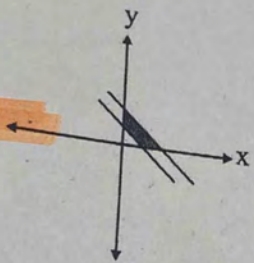
$x + y \geq 10,\ 2x + 2y \leq 25,\ x \geq 0,\ y \geq 0$

(1)

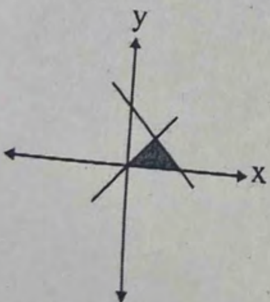


(2)

(3)

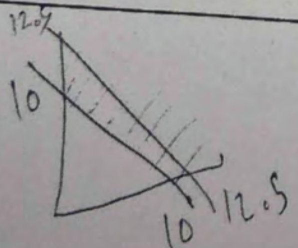


(4)



SPACE FOR ROUGH WORK

4
29
×5
145



12.5
25/2