MATHS

BOOKS - JMD MATHS (PUNJABI ENGLISH)

Determinants

Exercise

1. If $\begin{bmatrix} 2x & 5 \\ 4 & 2 \end{bmatrix}$ is singular, then x =

    A. 20

    B. 4

    C. 5

    D. 10

Answer: C

2. If $\left| \begin{bmatrix} x & 2 \\ 18 & x \end{bmatrix} \right| = \left| \begin{bmatrix} 6 & 2 \\ 18 & 6 \end{bmatrix} \right|$, then x is equal to:

A. 6

B. ± 6

C. -6

D. 6,6

Answer: B

3. if A=[[m,-2] ,[-2,m]] and $|A|^2$ =25 , then m=

A. ± 1

B. ± 2

C. ± 3

D. ± 4

Answer: C

4. Let |A| be square matrix of order 3 and |A| = 6, then |2A| =

A. 12

B. 72

C. 24

D. 48

Answer: D

5. Let A be a non-singular matrix of order 3×3. Then I adj. A I is equal to :`

A. $|A|^3$

B. $|A|$

C. $|A|^2$

D. $|A|^2$

Answer: C

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6. If A and B are square matrices of order 3 x 3 such that |A|=2,|B|=3, then

|2AB| =

A. 48

B. 12

C. 36

D. 24

Answer: A

7. If A be a matrix of order 4 x 4 and |A| =20, then $\left|A^{-1}\right|$ =

A. 20

B. $\dfrac{1}{20}$

C. 5

D. $\dfrac{1}{5}$

Answer: B

8. If A = $\begin{bmatrix} 1 & 3 \\ 2 & 4 \end{bmatrix}$,then A.(Adj. A) =

A. $\begin{bmatrix} 0 & -2 \\ -2 & 0 \end{bmatrix}$

B. $\begin{bmatrix} -2 & 0 \\ 0 & -2 \end{bmatrix}$

C. $\begin{bmatrix} 2 & 0 \\ 0 & 2 \end{bmatrix}$

D. $\begin{bmatrix} 0 & 2 \\ 2 & 0 \end{bmatrix}$

Answer: B

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9. If A is non-singular matrix of order 3 and |A|=4 then |Adj. (Adj. A)| =
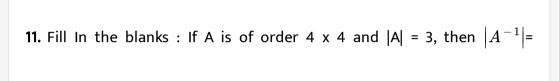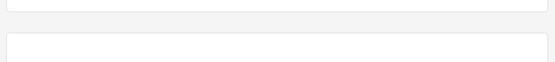
A. 16

B. 4

C. 256

D. 64

Answer: C

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10. Fill In the blanks : If A is square matrix of order 3 and |A| = 5, then |Adj A| = _____

11. Fill In the blanks : If A is of order 4 x 4 and |A| = 3, then $\left|A^{-1}\right|=$ _____

12. Fill In the blanks : If A is square matrix of order 3 and |A| = 6, then |3A| = _____

13. Fill In the blanks : If $[[x, 4], [9, x] = [5, 3], [4, 5]]$ then x= _____

14. State true/false:If A is square matrix of order 3 and |A| = 4 then |3A| = 36

15. State true/false:If A is square matrix of order 4 and |A|= 5 then |Adj. A| = 125

16. State true/false:IF A is square matrix then $\left|A^{-1}\right| = \dfrac{1}{|A|}$

17. Solve by matrix method

$3x - 4y + 2z = -1, 2x + 3y + 5z = 7, x + z = 2$

18. Solve by matrix method

$$\left(\frac{2}{x}\right) + \left(\frac{3}{y}\right) + \left(\frac{10}{z}\right) = 4, \left(\frac{4}{x}\right) - \left(\frac{6}{y}\right) + \left(\frac{5}{z}\right) = 1, \left(\frac{6}{x}\right) + \left(\frac{9}{y}\right) -$$

and $x, y, z \neq 0$

19. The sum of three numbers is 6. If we multiply third number by 3 and add second number to it, we get 11. By adding first and third numbers we get double of the second number. Represent it algebraically and find the numbers using matrix method.

20. Solve by matrix method

$$3x + 2y + z = 1000, 4x + y + 3z = 1500, \text{ and } x + y + z = 600$$