

Course: Machine Learning - Foundations
Week 4: Practice questions

1. (1 point)

Answer: B

2. (1 point)

Answer: determinant = product of eigen values

3. (1 point)

Answer: Trace=sum of eigen values

4. (1 point)

Answer: Refer q no 2 and q no 3

5. (1 point)

Answer: To find characteristic polynomial obtain $|A - \lambda I|$

6. (1 point)

Answer: Solve for λ , $|A - \lambda I| = 0$

7. (1 point)

Answer: If λ is an eigen value of A then λ^n is eigen value of A^n and vice versa

8. (1 point)

Answer: A

9. (1 point)

Answer: C

10. (1 point)

Answer: D

11. (2 points)

Answer: 5, -1

12. (2 points)

Answer: solve $(A - \lambda I)x = 0$, where λ is the eigen value and x is corresponding eigen vector

13. (1 point)

Answer: A permutation matrix may or may not have eigen value -1

14. (2 points)

Answer:
$$\begin{bmatrix} \theta_0 \\ \theta_1 \\ \theta_2 \end{bmatrix} = \begin{bmatrix} 0 & 1.5 & 2.25 \\ 1 & 1.3 & 1.69 \\ 1 & 4 & 16 \end{bmatrix}^{-1} \begin{bmatrix} 0 \\ 1.5 \\ 1 \end{bmatrix}$$