Clicker Slides Math 35100

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Question 1: If A is an 8×11 matrix whose rank is 6, then _____

(i) $AX = b$ is solvable for every vector b.

(ii) there are some vectors b for which $AX = b$ is not solvable.

(iii) for some vectors b, the system $AX = b$ has exactly one solution.

(iv) for some vectors b, the system $AX = b$ has infinitely many solutions.

(v) the given information is contradictory, no such system is possible.

A. (i) & (iii)   **B.** (i) & (iv)   **C.** (ii) & (iii)

        D. (ii) & (iv)   **E.** (v)

Question 2:   If A is an 8×11 matrix whose rank is 8, then _____

(i) $AX = b$ is solvable for every vector b.

(ii) there are some vectors b for which $AX = b$ is not solvable.

(iii) for some vectors b, the system $AX = b$ has exactly one solution.

(iv) for some vectors b, the system $AX = b$ has infinitely many solutions.

(v) the given information is contradictory, no such system is possible.

A. (i) & (iii)   **B.** (i) & (iv)   **C.** (ii) & (iii)

D. (ii) & (iv)   **E.** (v)

Question 3: If A is an 8×11 matrix whose rank is 10, then _____

(i) $AX = b$ is solvable for every vector b.

(ii) there are some vectors b for which $AX = b$ is not solvable.

(iii) for some vectors b, the system $AX = b$ has exactly one solution.

(iv) for some vectors b, the system $AX = b$ has infinitely many solutions.

(v) the given information is contradictory, no such system is possible.

A. (i) & (iii) **B.** (i) & (iv) **C.** (ii) & (iii)

D. (ii) & (iv) **E.** (v)

Question 4: If A is an 12×7 matrix whose rank is 9, then _____

(i) $AX = b$ is solvable for every vector b.

(ii) there are some vectors b for which $AX = b$ is not solvable.

(iii) for some vectors b, the system $AX = b$ has exactly one solution.

(iv) for some vectors b, the system $AX = b$ has infinitely many solutions.

(v) the given information is contradictory, no such system is possible.

A. (i) & (iii)   **B.** (i) & (iv)   **C.** (ii) & (iii)

D. (ii) & (iv)   **E.** (v)

Question 5: If A is an 12×7 matrix whose rank is 7, then ———

(i) $AX = b$ is solvable for every vector b.

(ii) there are some vectors b for which $AX = b$ is not solvable.

(iii) for some vectors b, the system $AX = b$ has exactly one solution.

(iv) for some vectors b, the system $AX = b$ has infinitely many solutions.

(v) the given information is contradictory, no such system is possible.

A. (i) & (iii)   **B.** (i) & (iv)   **C.** (ii) & (iii)

     D. (ii) & (iv)   **E.** (v)

Question 6: If A is an 12×7 matrix whose rank is 5, then _____

(i) $AX = b$ is solvable for every vector b.

(ii) there are some vectors b for which $AX = b$ is not solvable.

(iii) for some vectors b, the system $AX = b$ has exactly one solution.

(iv) for some vectors b, the system $AX = b$ has infinitely many solutions.

(v) the given information is contradictory, no such system is possible.

A. (i) & (iii)   **B.** (i) & (iv)   **C.** (ii) & (iii)

D. (ii) & (iv)   **E.** (v)