

소프트웨어 학부 가반

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신대니

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1. ④

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10. ①

11. ②

12. ④

14. ④

15. ④

주관식

1. 22.

2. (1) 3×3 , 3×2

(2) 2, -5

(3) 2×3

(4) 4, 2

(5) (1, 2)

3.

$$(1) \begin{pmatrix} 1 & 2 & -3 \\ 2 & 4 & -6 \\ -3 & -6 & 9 \end{pmatrix}$$

(2) 13

4. 3

5. $a=1$

$b=1$

$c=-3$

6. $(2 \times 2)(2 \times 3) = (2 \times 3) = (2 \times 3)(3 \times 3)$

$$I_2 \times A = A = A \times I_3$$

$$\therefore I_2 = (2 \times 2) = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}, I_3 = (3 \times 3) = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$7 \quad 4 \cdot 2 \cdot (-3) + 7 \cdot 2 \cdot 1 + (-1) \cdot 3 \cdot 5 - 1 \cdot 2 \cdot (-1) - 5 \cdot 2 \cdot 4 - (-3) \cdot 3 \cdot 7 = 0$$

8. 1) -5

2) 4

9. $k=-1$

$$10 \quad A^{-1} = \begin{pmatrix} 1 & 0 & 1 \\ 3 & 3 & 4 \\ 2 & 2 & 3 \end{pmatrix}$$

$$11. \lambda_1 = \frac{13}{26}$$

$$\lambda_2 = -\frac{1}{4}$$

$$\lambda_3 = \frac{3}{26}$$

$$12 \left(\begin{array}{ccc|ccc} 1 & 0 & -1 & 1 & 0 & 0 \\ 1 & 2 & 1 & 0 & 1 & 0 \\ 2 & 2 & 3 & 0 & 0 & 1 \end{array} \right) \rightarrow \left(\begin{array}{ccc|ccc} 1 & 0 & -1 & 1 & 0 & 0 \\ 0 & 2 & 2 & -1 & 1 & 0 \\ 2 & 2 & 3 & 0 & 0 & 1 \end{array} \right) \rightarrow \left(\begin{array}{ccc|ccc} 1 & 0 & -1 & 1 & 0 & 0 \\ 0 & 2 & 2 & -1 & 1 & 0 \\ 0 & 2 & 5 & -2 & 0 & 1 \end{array} \right)$$

$$\left(\begin{array}{ccc|ccc} 1 & 0 & -1 & 1 & 0 & 0 \\ 0 & 1 & 1 & -\frac{1}{2} & \frac{1}{2} & 0 \\ 0 & 2 & 5 & -2 & 0 & 1 \end{array} \right) \rightarrow \left(\begin{array}{ccc|ccc} 1 & 0 & -1 & 1 & 0 & 0 \\ 0 & 1 & 1 & -\frac{1}{2} & \frac{1}{2} & 0 \\ 0 & 0 & 3 & -1 & -1 & 1 \end{array} \right) \rightarrow \left(\begin{array}{ccc|ccc} 1 & 0 & -1 & 1 & 0 & 0 \\ 0 & 1 & 1 & -\frac{1}{2} & \frac{1}{2} & 0 \\ 0 & 0 & 1 & -\frac{1}{3} & -\frac{1}{3} & \frac{1}{3} \end{array} \right) \rightarrow$$

$$\left(\begin{array}{ccc|ccc} 1 & 0 & -1 & 1 & 0 & 0 \\ 0 & 1 & 0 & -\frac{1}{6} & \frac{5}{6} & \frac{1}{2} \\ 0 & 0 & 1 & -\frac{1}{3} & -\frac{1}{3} & \frac{1}{3} \end{array} \right) \rightarrow \left(\begin{array}{ccc|ccc} 1 & 0 & 0 & \frac{2}{3} & -\frac{1}{3} & \frac{1}{3} \\ 0 & 1 & 0 & -\frac{1}{6} & \frac{5}{6} & -\frac{1}{3} \\ 0 & 0 & 1 & -\frac{1}{3} & -\frac{1}{3} & \frac{1}{3} \end{array} \right)$$

13.