

D S T Q Q S S

②

$$a) A = \begin{vmatrix} 1 & 0 & 0 \\ 0 & 1 & 1 \\ 0 & -1 & 1 \end{vmatrix}$$

$$\det A = \begin{vmatrix} 1 & 0 & 0 \\ 0 & 1 & 1 \\ 0 & -1 & 1 \end{vmatrix}$$

$0 + 1 + 0 = 1$

$1 + 0 + 0 = 1$

$$\det A = 1 - (-1) = 1 + 1 = 2$$

$$1) \begin{vmatrix} 1 & 0 & 0 & 3 \\ 0 & 1 & -1 & 4 \\ 0 & 0 & 0 & 3 \\ 0 & 1 & 1 & 4 \end{vmatrix}$$

$$0 \cdot \cancel{\text{cof}(B_{12})} + 1 \cdot \text{cof}(B_{22}) + 0 \cdot \cancel{\text{cof}(B_{32})} + 1 \cdot \text{cof}(B_{42})$$

$$1. \begin{vmatrix} 1 & 0 & 3 \\ 0 & 0 & 3 \\ 0 & 1 & 4 \end{vmatrix} \quad 1. \begin{vmatrix} 1 & 0 & 3 \\ 0 & -1 & 4 \\ 0 & 0 & 3 \end{vmatrix}$$

$$1. \begin{vmatrix} 1 & 0 & 3 & 1 & 0 \\ 0 & 0 & 3 & 0 & 0 \\ 0 & 1 & 4 & 0 & 1 \end{vmatrix}$$

$0 + 3 + 0 = 3$

$0 + 0 + 0 = 0$

$$1. \begin{vmatrix} 1 & 0 & 3 & 1 & 0 \\ 0 & -1 & 4 & 0 & -1 \\ 0 & 0 & 3 & 0 & 0 \end{vmatrix}$$

$0 + 0 + 0 = 0$

$-3 + 0 + 0 = -3$

$$0 - 3 = -3$$

$$1 + 5 = 4 \text{ PAR } -3 //$$

$$-3 - 0 = -3$$

$$1 + 5 = 6 \text{ PAR } -3$$

$$\det B = -3 + (-3) = \boxed{-6}$$

② $x = ?$ $\det = 0$

$$\begin{vmatrix} x^2 & 0 & x & -\frac{1}{10} \\ 7.5 & 0 & 5 & 2 \\ 10 & 0 & 4 & 2 \\ 1 & 1 & 1 & 1 \end{vmatrix} = 0$$

$$1. \begin{vmatrix} x^2 & x & -\frac{1}{10} & x^2 & x \\ 7.5 & 5 & 2 & 7.5 & 5 \\ 10 & 4 & 2 & 10 & 4 \end{vmatrix}$$

$-5 + 8x^2 + 15x$

$10x^2 + 20x - 3$

$$\det = 10x^2 + 20x - 3 - (-5 + 8x^2 + 15x) = 0$$

$$10x^2 + 20x - 3 + 5 - 8x^2 - 15x = 0$$

$$2x^2 + 5x + 2 = 0$$

$$\Delta = 5^2 - 4 \cdot 2 \cdot 2$$

$$\Delta = 25 - 16 = 9$$

$$x_1 = \frac{-5 + \sqrt{9}}{2 \cdot 2} = \frac{-5 + 3}{4} = \frac{-2}{4} = -\frac{1}{2}$$

$$x_{11} = \frac{-5 - \sqrt{9}}{2 \cdot 2} = \frac{-5 - 3}{4} = \frac{-8}{4} = -2$$

$$x = -\frac{1}{2} \text{ or } x = -2$$

③

$$\begin{array}{c|cccc}
 x & 0 & 0 & 3 \\
 -1 & x & 0 & 0 \\
 0 & -1 & x & 1 \\
 0 & 0 & -1 & -2
 \end{array}$$

$$\begin{array}{c|cccc}
 x & 0 & 3 & -1 & -1 \\
 0 & x & 1 & & \\
 0 & -1 & 2 & & \\
 & & & x & 0 & 3 \\
 & & & -1 & 0 & 0 \\
 & & & 0 & -1 & -2
 \end{array}$$

$$\begin{array}{c|cccc}
 x & 0 & 3 & -1 & -2 \\
 0 & x & 1 & 0 & x \\
 0 & -1 & 2 & 0 & -1
 \end{array}$$

$0 - x - 0 = -x$
 $-2x^2 + 0 + 0 = -2x^2$

$$\begin{array}{c|cccc}
 -1 & 0 & 3 & -1 & -2 \\
 0 & x & 1 & 0 & x \\
 0 & -1 & 2 & 0 & -1
 \end{array}$$

$0 + 0 + 0 = 0$
 $0 - 0 + 3 = 3$

$$x \cdot (-2x^2 - (-x))$$

$$x \cdot (-2x^2 + x)$$

$$= -2x^3 + x^2$$

$$i+j = 2+2 \text{ PAR} \quad -2x^3 + x^2$$

$$-1 \cdot (3 - 0)$$

$$-1 \cdot 3 = -3$$

$$i+j = 5 \text{ IMPAR} \quad +3$$

$$④ \quad A = \begin{pmatrix} x & 1 & 0 & 0 & 0 \\ 0 & x & 1 & 0 & 0 \\ 0 & 0 & x & 1 & 0 \\ 0 & 0 & 0 & x & k \\ 0 & 0 & 0 & 1 & x \end{pmatrix}$$

$$F(x) = \det A \quad e \quad F(-2) = 8$$

$$k = ?$$

$$X. \quad \begin{pmatrix} x & 1 & 0 & 0 & 0 \\ 0 & x & 1 & 0 & 0 \\ 0 & 0 & x & 1 & k \\ 0 & 0 & 1 & x & 1 \end{pmatrix}$$

$$X. \quad \begin{pmatrix} x & 0 & 0 & 0 & 0 \\ 0 & x & 1 & 0 & 0 \\ 0 & 0 & x & 1 & 0 \\ 0 & 0 & 0 & x & 1 \\ 0 & 0 & 0 & 0 & x \end{pmatrix}$$

$$0 + x + 0 = kx$$

$$x^3 + 0 + 0 = x^3$$

$$\det A = x(x \cdot (x^3 - kx))$$

$$\det A = x^2(x^3 - kx)$$

$$\det A = x^5 - kx^3$$

$$F(-2) = -2^5 - k \cdot (-2)^3 = 8$$

$$-32 - k \cdot (-8) = 8$$

$$-32 + 8k = 8$$

$$8k = 8 + 32$$

$$k = \frac{40}{8} = 5$$

$$F(x) = \det A$$

$$F(x) = x^5 - kx^3$$

$$F(-2) = 8$$

Alternativa (d)