

# 代幾 I 計算演習 [問題] (2009/01/23)

問. 次の行列の行列式を求めなさい

Q.1

$$\begin{vmatrix} 1 & 1 & 1 & 1 \\ -5 & 2 & 5 & 3 \\ 25 & 4 & 25 & 9 \\ -125 & 8 & 125 & 27 \end{vmatrix}$$

Q.7

$$\begin{vmatrix} 1 & 3 & 9 & 27 \\ 1 & -3 & 9 & -27 \\ 1 & 4 & 16 & 64 \\ 1 & -1 & 1 & -1 \end{vmatrix}$$

Q.2

$$\begin{vmatrix} 1 & 1 & 1 \\ 1 & -1 & -4 \\ 1 & 1 & 16 \end{vmatrix}$$

Q.8

$$\begin{vmatrix} 1 & 1 & 1 \\ 3 & 5 & 1 \\ 9 & 25 & 1 \end{vmatrix}$$

Q.3

$$\begin{vmatrix} 1 & 2 & 4 & 8 \\ 1 & 5 & 25 & 125 \\ 1 & 3 & 9 & 27 \\ 1 & -5 & 25 & -125 \end{vmatrix}$$

Q.9

$$\begin{vmatrix} 1 & 1 & 1 & 1 \\ -1 & 5 & -2 & 1 \\ 1 & 25 & 4 & 1 \\ -1 & 125 & -8 & 1 \end{vmatrix}$$

Q.4

$$\begin{vmatrix} 1 & 1 & 1 & 1 \\ 2 & 4 & -3 & 3 \\ 4 & 16 & 9 & 9 \\ 8 & 64 & -27 & 27 \end{vmatrix}$$

Q.10

$$\begin{vmatrix} 1 & 4 & 16 \\ 1 & 0 & 0 \\ 1 & -3 & 9 \end{vmatrix}$$

Q.5

$$\begin{vmatrix} 1 & 0 & 0 & 0 \\ 1 & -2 & 4 & -8 \\ 1 & 4 & 16 & 64 \\ 1 & 2 & 4 & 8 \end{vmatrix}$$

Q.11

$$\begin{vmatrix} 1 & -2 & 4 & -8 \\ 1 & 1 & 1 & 1 \\ 1 & 0 & 0 & 0 \\ 1 & 4 & 16 & 64 \end{vmatrix}$$

Q.6

$$\begin{vmatrix} 1 & 1 & 1 \\ -3 & -4 & -2 \\ 9 & 16 & 4 \end{vmatrix}$$

Q.12

$$\begin{vmatrix} 1 & 1 & 1 & 1 \\ -4 & 4 & -2 & -1 \\ 16 & 16 & 4 & 1 \\ -64 & 64 & -8 & -1 \end{vmatrix}$$

## 代幾 I 計算演習 [解答] (2009/01/23)

A.1

$$\text{与式} = -3360$$

A.2

$$\text{与式} = -30$$

A.3

$$\text{与式} = 3360$$

A.4

$$\text{与式} = -420$$

A.5

$$\text{与式} = 768$$

A.6

$$\text{与式} = -2$$

A.7

$$\text{与式} = -1680$$

A.8

$$\text{与式} = 16$$

A.9

$$\text{与式} = -1008$$

A.10

$$\text{与式} = -84$$

A.11

$$\text{与式} = -432$$

A.12

$$\text{与式} = 1440$$