

# 代幾 I 計算演習 [問題] (2008/06/26)

問. 次の二つの空間ベクトル  $u, v$  の外積  $u \times v$  を求めなさい

- Q.1  $u = \begin{pmatrix} -2 \\ -3 \\ -1 \end{pmatrix}, v = \begin{pmatrix} 0 \\ -3 \\ -2 \end{pmatrix}$
- Q.2  $u = \begin{pmatrix} -1 \\ 0 \\ -1 \end{pmatrix}, v = \begin{pmatrix} 1 \\ -1 \\ -1 \end{pmatrix}$
- Q.3  $u = \begin{pmatrix} 0 \\ -1 \\ 2 \end{pmatrix}, v = \begin{pmatrix} 1 \\ 0 \\ -2 \end{pmatrix}$
- Q.4  $u = \begin{pmatrix} -2 \\ -2 \\ -1 \end{pmatrix}, v = \begin{pmatrix} -3 \\ -2 \\ 1 \end{pmatrix}$
- Q.5  $u = \begin{pmatrix} -1 \\ -1 \\ -3 \end{pmatrix}, v = \begin{pmatrix} -2 \\ -2 \\ 0 \end{pmatrix}$
- Q.6  $u = \begin{pmatrix} 1 \\ 0 \\ 3 \end{pmatrix}, v = \begin{pmatrix} -3 \\ 3 \\ 1 \end{pmatrix}$
- Q.7  $u = \begin{pmatrix} 0 \\ 2 \\ 0 \end{pmatrix}, v = \begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix}$
- Q.8  $u = \begin{pmatrix} 3 \\ -1 \\ 2 \end{pmatrix}, v = \begin{pmatrix} -2 \\ -2 \\ -1 \end{pmatrix}$
- Q.9  $u = \begin{pmatrix} -2 \\ 3 \\ -2 \end{pmatrix}, v = \begin{pmatrix} 0 \\ 0 \\ -1 \end{pmatrix}$
- Q.10  $u = \begin{pmatrix} 0 \\ -2 \\ -1 \end{pmatrix}, v = \begin{pmatrix} 0 \\ 1 \\ -2 \end{pmatrix}$
- Q.11  $u = \begin{pmatrix} 2 \\ -1 \\ 1 \end{pmatrix}, v = \begin{pmatrix} -2 \\ -2 \\ 0 \end{pmatrix}$
- Q.12  $u = \begin{pmatrix} -3 \\ -2 \\ 2 \end{pmatrix}, v = \begin{pmatrix} 0 \\ -2 \\ -1 \end{pmatrix}$
- Q.13  $u = \begin{pmatrix} -1 \\ 1 \\ 2 \end{pmatrix}, v = \begin{pmatrix} 2 \\ 2 \\ -3 \end{pmatrix}$
- Q.14  $u = \begin{pmatrix} 0 \\ 0 \\ -1 \end{pmatrix}, v = \begin{pmatrix} 0 \\ 0 \\ -3 \end{pmatrix}$
- Q.15  $u = \begin{pmatrix} -3 \\ -2 \\ 2 \end{pmatrix}, v = \begin{pmatrix} 2 \\ 0 \\ 2 \end{pmatrix}$
- Q.16  $u = \begin{pmatrix} 2 \\ -3 \\ -3 \end{pmatrix}, v = \begin{pmatrix} 1 \\ -2 \\ 2 \end{pmatrix}$
- Q.17  $u = \begin{pmatrix} 0 \\ -3 \\ 0 \end{pmatrix}, v = \begin{pmatrix} -2 \\ -3 \\ 3 \end{pmatrix}$
- Q.18  $u = \begin{pmatrix} 0 \\ 2 \\ 0 \end{pmatrix}, v = \begin{pmatrix} -1 \\ 1 \\ 1 \end{pmatrix}$
- Q.19  $u = \begin{pmatrix} -2 \\ 1 \\ -1 \end{pmatrix}, v = \begin{pmatrix} -1 \\ 2 \\ -2 \end{pmatrix}$
- Q.20  $u = \begin{pmatrix} 0 \\ -3 \\ 2 \end{pmatrix}, v = \begin{pmatrix} 1 \\ 0 \\ -3 \end{pmatrix}$
- Q.21  $u = \begin{pmatrix} 3 \\ -1 \\ -3 \end{pmatrix}, v = \begin{pmatrix} 1 \\ 3 \\ 2 \end{pmatrix}$

代幾 I 計算演習 [解答] (2008/06/26)

A.1

$$\begin{pmatrix} 3 \\ -4 \\ 6 \end{pmatrix}$$

A.2

$$\begin{pmatrix} -1 \\ -2 \\ 1 \end{pmatrix}$$

A.3

$$\begin{pmatrix} 2 \\ 2 \\ 1 \end{pmatrix}$$

A.4

$$\begin{pmatrix} -4 \\ 5 \\ -2 \end{pmatrix}$$

A.5

$$\begin{pmatrix} -6 \\ 6 \\ 0 \end{pmatrix}$$

A.6

$$\begin{pmatrix} -9 \\ -10 \\ 3 \end{pmatrix}$$

A.7

$$\begin{pmatrix} 0 \\ 0 \\ -2 \end{pmatrix}$$

A.8

$$\begin{pmatrix} 5 \\ -1 \\ -8 \end{pmatrix}$$

A.9

$$\begin{pmatrix} -3 \\ -2 \\ 0 \end{pmatrix}$$

A.10

$$\begin{pmatrix} 5 \\ 0 \\ 0 \end{pmatrix}$$

A.11

$$\begin{pmatrix} 2 \\ -2 \\ -6 \end{pmatrix}$$

A.12

$$\begin{pmatrix} 6 \\ -3 \\ 6 \end{pmatrix}$$

A.13

$$\begin{pmatrix} -7 \\ 1 \\ -4 \end{pmatrix}$$

A.14

$$\begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix}$$

A.15

$$\begin{pmatrix} -4 \\ 10 \\ 4 \end{pmatrix}$$

A.16

$$\begin{pmatrix} -12 \\ -7 \\ -1 \end{pmatrix}$$

A.17

$$\begin{pmatrix} -9 \\ 0 \\ -6 \end{pmatrix}$$

A.18

$$\begin{pmatrix} 2 \\ 0 \\ 2 \end{pmatrix}$$

A.19

$$\begin{pmatrix} 0 \\ -3 \\ -3 \end{pmatrix}$$

A.20

$$\begin{pmatrix} 9 \\ 2 \\ 3 \end{pmatrix}$$

A.21

$$\begin{pmatrix} 7 \\ -9 \\ 10 \end{pmatrix}$$