**Topic**: Matrix dimensions and entries

**Question**: Give the dimensions of the matrix.

$$K = \begin{bmatrix} 1 & 0 & -1 & 3 \\ 2 & 5 & 6 & -2 \end{bmatrix}$$

**Answer choices**:

A The dimensions are $4 \times 2$

B The dimensions are $1 \times 8$

C The dimensions are $2 \times 4$

D The dimensions are $3 \times 3$

**Solution**: C

We always give the dimensions of a matrix as rows $\times$ columns. Matrix $K$ has $2$ rows and $4$ columns, so $K$ is a $2 \times 4$ matrix.

**Topic**: Matrix dimensions and entries

**Question**: Given matrix $B$, find $B_{2,1}$.

$$B = \begin{bmatrix} 1 & 3 \\ 0 & -1 \end{bmatrix}$$

**Answer choices**:

A $1$

B $0$

C $-1$

D $3$

**Solution**: B

The value of $B_{2,1}$ is the entry in the second row, first column of matrix $B$, which is $0$, so $B_{2,1} = 0$.

**Topic**: Matrix dimensions and entries

**Question**: Give the dimensions of matrix $M$ and find $M_{3,2}$.

$$M = \begin{bmatrix} 1 & 3 & 7 \\ 0 & -1 & 2 \\ 9 & 4 & 6 \end{bmatrix}$$

**Answer choices**:

A The dimensions are $3 \times 3$ and $M_{3,2} = 4$

B The dimensions are $2 \times 3$ and $M_{3,2} = 2$

C The dimensions are $3 \times 3$ and $M_{3,2} = 2$

D The dimensions are $3 \times 1$ and $M_{3,2} = 4$

**Solution**: A

We always give the dimensions of a matrix as rows $\times$ columns. Matrix $M$ has $3$ rows and $3$ columns, so $M$ is a $3 \times 3$ matrix.

The value of $M_{3,2}$ is the entry in the third row, second column of matrix $M$, which is $4$, so $M_{3,2} = 4$.