

# Matric Arithmetic – Section Test

In questions 1-4,  $P$  is the matrix:  $\begin{pmatrix} -1 & 2 \\ 1 & 3 \end{pmatrix}$  and  $Q$  is the matrix:  $\begin{pmatrix} -2 & 4 \\ -3 & 5 \end{pmatrix}$ .

The matrix  $PQ$  is given by:  $\begin{pmatrix} w & x \\ y & z \end{pmatrix}$

- 1) What is the value of  $w$  ?
- 2) What is the value of  $x$  ?
- 3) What is the value of  $y$  ?
- 4) What is the value of  $z$  ?

In Questions 5-9,  $A$  is the matrix  $\begin{pmatrix} 2 & 3 \\ 1 & 4 \end{pmatrix}$ .

$B$  is the matrix  $\begin{pmatrix} 3 & -1 \\ 0 & 2 \end{pmatrix}$

$C$  is the matrix  $\begin{pmatrix} -1 \\ 2 \end{pmatrix}$

5)  $2A$  is the matrix:  $\begin{pmatrix} a & b \\ c & d \end{pmatrix}$

What are the values for  $a, b, c, d$  ?

6)  $BA$  is the matrix:  $\begin{pmatrix} e & f \\ g & h \end{pmatrix}$

What are the values for  $e, f, g, h$  ?

7)  $AC$  is the matrix:  $\begin{pmatrix} i \\ j \end{pmatrix}$

What are the values for  $i$  and  $j$  ?

8)  $BC$  is the matrix:  $\begin{pmatrix} k \\ l \end{pmatrix}$

What are the values for  $k$  and  $l$  ?

9)  $A^2$  is the matrix:  $\begin{pmatrix} m & n \\ p & q \end{pmatrix}$

What are the values for  $m, n, p, q$  ?

10)  $I$  is the  $2 \times 2$  identity matrix. Which of the following statements are true for any  $2 \times 2$  matrix  $A$ ?

(i)  $AI = IA = A$

(ii)  $A + I = I + A = A$

(a) both (i) and (ii)

(b) neither (i) nor (ii)

(c) (i) only

(d) (ii) only