# EQUAL MATRICES

**Answer ALL questions in the spaces provided for your answers. Give answers in exact decimals where appropriate (e.g. 1.5 or -0.25 or 0.625)**

1. Given that $A = \begin{pmatrix} -1 & x \\ y & 3 \end{pmatrix}$, $B = \begin{pmatrix} 3 & 1 \\ -1 & 2 \end{pmatrix}$, $C = \begin{pmatrix} -4 & r \\ s & 7 \end{pmatrix}$ and $AB = C$, determine the values of $x, y, r$ and $s$.

   $x =$ _____ $y =$ _____ $r =$ _____ $s =$ _____

2. Given that $\begin{pmatrix} -1 & x \\ y & 2 \end{pmatrix}\begin{pmatrix} 2 & -1 \\ 1 & 3 \end{pmatrix} = \begin{pmatrix} a & 10 \\ 6 & b \end{pmatrix}$, evaluate $x, y, a$ and $b$.

   $x =$ _____ $y =$ _____ $a =$ _____ $b =$ _____

3. If $P = \begin{pmatrix} 3 & -2 \\ 4 & 1 \end{pmatrix}$, $Q = \begin{pmatrix} 7 & 5 \\ 0 & 6 \end{pmatrix}$, $R = \begin{pmatrix} p & q \\ r & s \end{pmatrix}$ and $\frac{1}{2}PQ = R$, calculate the values of $p, q, r$ and $s$.

   $p =$ _____ $q =$ _____ $r =$ _____ $s =$ _____

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4. Given that $A = \begin{pmatrix} 2 & -3 \\ 4 & 5 \end{pmatrix}$, $B = \begin{pmatrix} 7 & 6 \\ 8 & 1 \end{pmatrix}$, $C = \begin{pmatrix} a & b \\ c & d \end{pmatrix}$ and $\frac{1}{2}A - \frac{1}{4}B = C$, calculate the values of $a, b, c$ and $d$.

$a =$ _____ $b =$ _____ $c =$ _____ $d =$ _____

5. If $P = \begin{pmatrix} -5 & 3 \\ 6 & 7 \end{pmatrix}$, $Q = \begin{pmatrix} 6 & -2 \\ 1 & 0 \end{pmatrix}$, $R = \begin{pmatrix} w & x \\ y & z \end{pmatrix}$ and $2P - Q = R$, determine the values of $w, x, y$ and $z$.

$w =$ _____ $x =$ _____ $y =$ _____ $z =$ _____

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