**Matrix Multiplication**

Is it possible to multiply the matrices shown?

(a) $\left(\begin{matrix}2\\0\\4\end{matrix}\right)×\left(\begin{matrix}5&-1\\4&0\end{matrix}\right)$

(b) $\left(\begin{matrix}-7&4\end{matrix}\right)×\left(\begin{matrix}2\\6\end{matrix}\right)$

(c) $\left(\begin{matrix}1&0\\4&-3\end{matrix}\right)×\left(\begin{matrix}3&2&5\\6&0&-1\end{matrix}\right)$

Work out:

(a) $\left(\begin{matrix}4\\2\end{matrix}\right)×\left(\begin{matrix}-2&5\end{matrix}\right)$

(b) $\left(\begin{matrix}0&3\\2&5\end{matrix}\right)×\left(\begin{matrix}-1&3\\0&6\end{matrix}\right)$

(c) $\left(\begin{matrix}4&7&-2\end{matrix}\right)×\left(\begin{matrix}0\\1\\5\end{matrix}\right)$

(d) $\left(\begin{matrix}1&-2\\3&7\end{matrix}\right)×\left(\begin{matrix}-1&4\\0&-2\end{matrix}\right)$

(e) $\left(\begin{matrix}0&2\\-5&3\end{matrix}\right)×\left(\begin{matrix}1&6\\-3&0\end{matrix}\right)$

(f) $\left(\begin{matrix}-2&1\\8&0\end{matrix}\right)×\left(\begin{matrix}-3&5\\1&2\end{matrix}\right)$

(a) Given that

$\left(\begin{matrix}-2&a\\-4&3\end{matrix}\right)\left(\begin{matrix}3\\7\end{matrix}\right)=\left(\begin{matrix}22\\9\end{matrix}\right)$

work out the value of $a$.

(b) Matrix **P** = $\left(\begin{matrix}2&3\\a&b\end{matrix}\right)$

Matrix **Q** = $\left(\begin{matrix}1&1\\0&1\end{matrix}\right)$

You are given that **PQ** = **QP**. Work out the values of $a$ and $b$.

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(b) $\left(\begin{matrix}0&3\\2&5\end{matrix}\right)×\left(\begin{matrix}-1&3\\0&6\end{matrix}\right)$

(c) $\left(\begin{matrix}4&7&-2\end{matrix}\right)×\left(\begin{matrix}0\\1\\5\end{matrix}\right)$

(d) $\left(\begin{matrix}1&-2\\3&7\end{matrix}\right)×\left(\begin{matrix}-1&4\\0&-2\end{matrix}\right)$

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