Bài 6.

a/ $A = \begin{pmatrix} 1 & 3 \\ k & 2 \end{pmatrix}$ $2 - 3k = 0 \Rightarrow k = \frac{2}{3}$

b/ $\begin{pmatrix} m & 1 & 3 \\ 1 & 3 & 2 \\ -1 & 4 & 5 \end{pmatrix} \Rightarrow m(7) - 7 + 3(7)$

$\Rightarrow 7m + 14 = 0$

$\Leftrightarrow m = -2.$

c/ $\begin{pmatrix} m & 2 & 0 \\ 1 & m & 1 \\ 2 & 3 & 1 \end{pmatrix} \Rightarrow m(m-3) - 2(1-2) + 0 = 0$

$\Rightarrow m^2 - 3m - 2 + 4 = 0$

$\Rightarrow m^2 - 3m + 2 = 0.$

$\Rightarrow \begin{cases} m = 1 \\ m = 3/2 \end{cases}$

Bài 5

a/ $|2AB| = 2^4 |A||B| = 16 \cdot (-5) \cdot 3 = -240$

b/ $|adj(AB)| = |AB|^3 = (-15)^3 = -3375.$

c/ $|5A^{-1}B^T| = |5A^{-1}||B^T| = 5^4 \cdot \frac{1}{-5} \cdot 3 = -375$

d/ $|A^T B^{-1} A^2| = |A^T||B^{-1}| \cdot |A|^2 = \frac{|A|^3}{|B|}$

$= \frac{(-5)^3}{3} = \frac{-125}{3}$