Section 2.1 3,5,8,13,14,15,16

3. $\begin{vmatrix} 3 & 5 \\ -2 & 4 \end{vmatrix} = 12 - (-10) = 22$

5. $\begin{vmatrix} -5 & 6 \\ -7 & -2 \end{vmatrix} = 10 - (-42) = 52$

8. $\begin{vmatrix} -2 & 7 & 6 \\ 5 & 1 & -2 \\ 3 & 8 & 4 \end{vmatrix}$ $\begin{matrix} -2 & 7 \\ 5 & 1 \\ 3 & 8 \end{matrix}$ $= (-8) + (-42) + 240 - (18) - (32) - (140)$
$= 0$

13.

a) $\begin{bmatrix} \lambda - 2 & 1 \\ -5 & \lambda + 4 \end{bmatrix} = (\lambda - 2)(\lambda + 4) - (-5)$

$= \lambda^2 + 2\lambda - 3 = (\lambda - 1)(\lambda + 3) = 0$

Thus $\lambda - 1 = 0$ or $\lambda + 3 = 0$

$\lambda = 1$ or -3

14.

(1,2,3,4)	no inversions	even
(1,2,4,3)	1	odd
(1,3,2,4)	1	odd
(1,3,4,2)	1 + 1 = 2	even
(1,4,2,3)	2	even
(1,4,3,2)	2 + 1 = 3	odd
⋮		
(4,3,2,1)	3 + 2 + 1 = 6	even