Math worksheet on *'Matrices - Find Minor Matrix from Description (3x3) (Level 1)'*. Part of a broader unit on *'Matrices'*

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1 Find the resulting 2x2 'minor' matrix when row 1 and column 2 are removed

$$M_{12}\ of\ \begin{bmatrix} 4 & 9 & 10 \\ 7 & 1 & 2 \\ 10 & 6 & 1 \end{bmatrix}$$

a $\begin{bmatrix} 4 & 10 \\ 10 & 1 \end{bmatrix}$ **b** $\begin{bmatrix} 4 & 10 \\ 7 & 2 \end{bmatrix}$ **c** $\begin{bmatrix} 7 & 2 \\ 10 & 1 \end{bmatrix}$ **d** $\begin{bmatrix} 4 & 9 \\ 10 & 6 \end{bmatrix}$ **e** $\begin{bmatrix} 9 & 10 \\ 1 & 2 \end{bmatrix}$ **f** $\begin{bmatrix} 9 & 10 \\ 6 & 1 \end{bmatrix}$

2 Find the resulting 2x2 'minor' matrix when row 1 and column 3 are removed

$$M_{13}\ of\ \begin{bmatrix} 6 & 5 & 1 \\ 9 & 3 & 8 \\ 8 & 7 & 2 \end{bmatrix}$$

a $\begin{bmatrix} 9 & 3 \\ 8 & 7 \end{bmatrix}$ **b** $\begin{bmatrix} 5 & 1 \\ 7 & 2 \end{bmatrix}$ **c** $\begin{bmatrix} 9 & 8 \\ 8 & 2 \end{bmatrix}$ **d** $\begin{bmatrix} 5 & 1 \\ 3 & 8 \end{bmatrix}$ **e** $\begin{bmatrix} 6 & 1 \\ 8 & 2 \end{bmatrix}$ **f** $\begin{bmatrix} 3 & 8 \\ 7 & 2 \end{bmatrix}$

3 Find the resulting 2x2 'minor' matrix when row 3 and column 3 are removed

$$M_{33}\ of\ \begin{bmatrix} 5 & 1 & 3 \\ 2 & 8 & 4 \\ 7 & 7 & 6 \end{bmatrix}$$

a $\begin{bmatrix} 1 & 3 \\ 7 & 6 \end{bmatrix}$ **b** $\begin{bmatrix} 2 & 4 \\ 7 & 6 \end{bmatrix}$ **c** $\begin{bmatrix} 1 & 3 \\ 8 & 4 \end{bmatrix}$ **d** $\begin{bmatrix} 2 & 8 \\ 7 & 7 \end{bmatrix}$ **e** $\begin{bmatrix} 5 & 1 \\ 2 & 8 \end{bmatrix}$ **f** $\begin{bmatrix} 5 & 3 \\ 2 & 4 \end{bmatrix}$

4 Find the resulting 2x2 'minor' matrix when row 2 and column 1 are removed

$$M_{21}\ of\ \begin{bmatrix} 5 & 8 & 2 \\ 7 & 9 & 0 \\ 3 & 0 & 6 \end{bmatrix}$$

a $\begin{bmatrix} 7 & 9 \\ 3 & 0 \end{bmatrix}$ **b** $\begin{bmatrix} 8 & 2 \\ 0 & 6 \end{bmatrix}$ **c** $\begin{bmatrix} 5 & 8 \\ 3 & 0 \end{bmatrix}$ **d** $\begin{bmatrix} 5 & 8 \\ 7 & 9 \end{bmatrix}$ **e** $\begin{bmatrix} 5 & 2 \\ 7 & 0 \end{bmatrix}$ **f** $\begin{bmatrix} 5 & 2 \\ 3 & 6 \end{bmatrix}$

5 Find the resulting 2x2 'minor' matrix when row 1 and column 3 are removed

$$M_{13}\ of\ \begin{bmatrix} 10 & 0 & 9 \\ 6 & 3 & 4 \\ 1 & 10 & 6 \end{bmatrix}$$

a $\begin{bmatrix} 0 & 9 \\ 10 & 6 \end{bmatrix}$ **b** $\begin{bmatrix} 10 & 9 \\ 6 & 4 \end{bmatrix}$ **c** $\begin{bmatrix} 6 & 3 \\ 1 & 10 \end{bmatrix}$ **d** $\begin{bmatrix} 0 & 9 \\ 3 & 4 \end{bmatrix}$ **e** $\begin{bmatrix} 6 & 4 \\ 1 & 6 \end{bmatrix}$ **f** $\begin{bmatrix} 10 & 0 \\ 6 & 3 \end{bmatrix}$

6 Find the resulting 2x2 'minor' matrix when row 3 and column 2 are removed

$$M_{32}\ of\ \begin{bmatrix} 0 & 6 & 7 \\ 2 & 4 & 2 \\ 6 & 1 & 4 \end{bmatrix}$$

a $\begin{bmatrix} 2 & 2 \\ 6 & 4 \end{bmatrix}$ **b** $\begin{bmatrix} 0 & 6 \\ 6 & 1 \end{bmatrix}$ **c** $\begin{bmatrix} 4 & 2 \\ 1 & 4 \end{bmatrix}$ **d** $\begin{bmatrix} 0 & 7 \\ 6 & 4 \end{bmatrix}$ **e** $\begin{bmatrix} 6 & 7 \\ 4 & 2 \end{bmatrix}$ **f** $\begin{bmatrix} 0 & 7 \\ 2 & 2 \end{bmatrix}$

7 Find the resulting 2x2 'minor' matrix when row 3 and column 3 are removed

$$M_{33}\ of\ \begin{bmatrix} 5 & 0 & 2 \\ 9 & 9 & 7 \\ 1 & 3 & 8 \end{bmatrix}$$

a $\begin{bmatrix} 0 & 2 \\ 9 & 7 \end{bmatrix}$ **b** $\begin{bmatrix} 5 & 0 \\ 9 & 9 \end{bmatrix}$ **c** $\begin{bmatrix} 9 & 7 \\ 3 & 8 \end{bmatrix}$ **d** $\begin{bmatrix} 9 & 7 \\ 1 & 8 \end{bmatrix}$ **e** $\begin{bmatrix} 5 & 0 \\ 1 & 3 \end{bmatrix}$ **f** $\begin{bmatrix} 5 & 2 \\ 1 & 8 \end{bmatrix}$