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Math worksheet on *'Matrices - Find Determinant Formula (3x3) (Level 2)'*. Part of a broader unit on *'Matrices'*

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1 Choose the correct formula for the determinant of this matrix based on expanding the first row

$$\begin{bmatrix} 2 & 3 & 9 \\ 3 & 2 & 2 \\ 1 & 1 & 3 \end{bmatrix}$$

a $2 \cdot 4 - 3 \cdot 6 + 9 \cdot 1$

b $2 \cdot 4 - 3 \cdot 10 + 9 \cdot 1$

c $1 \cdot 4 - 1 \cdot 7 + 1 \cdot 1$

d $2 \cdot 2 + 3 \cdot 7 + 9 \cdot 1$

e $2 \cdot 4 + 3 \cdot 7 + 9 \cdot 1$

f $2 \cdot 4 - 3 \cdot 7 + 9 \cdot 1$

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2 Choose the correct formula for the determinant of this matrix based on expanding the first row

$$\begin{bmatrix} 9 & 7 & 0 \\ 5 & 2 & 1 \\ 6 & 3 & 6 \end{bmatrix}$$

a $9 \cdot 7 - 7 \cdot 24 + 0 \cdot 3$

b $9 \cdot 9 - 7 \cdot 24 + 0 \cdot 3$

c $9 \cdot 5 + 7 \cdot 24 + 0 \cdot 3$

d $9 \cdot 7 + 7 \cdot 17 + 0 \cdot 3$

e $9 \cdot 9 + 7 \cdot 24 + 0 \cdot 3$

f $9 \cdot 9 + 7 \cdot 29 + 0 \cdot 3$

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3 Choose the correct formula for the determinant of this matrix based on expanding the first row

$$\begin{bmatrix} 6 & 4 & 3 \\ 1 & 7 & 5 \\ 1 & 8 & 3 \end{bmatrix}$$

a $6 \cdot 19 + 4 \cdot 1 + 3 \cdot 1$

b $6 \cdot 19 - 4 \cdot 2 + 3 \cdot 1$

c $6 \cdot 19 + 4 \cdot 2 + 3 \cdot 1$

d $6 \cdot 21 + 4 \cdot 2 + 3 \cdot 0$

e $6 \cdot 29 - 4 \cdot 2 + 3 \cdot 1$

f $6 \cdot 27 + 4 \cdot 2 + 3 \cdot 1$

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4 Choose the correct formula for the determinant of this matrix based on expanding the first row

$$\begin{bmatrix} 8 & 2 & 0 \\ 0 & 8 & 4 \\ 1 & 2 & 6 \end{bmatrix}$$

a $8 \cdot 32 - 2 \cdot 4 - 0 \cdot 8$

b $8 \cdot 40 - 2 \cdot 4 - 0 \cdot 8$

c $8 \cdot 40 + 2 \cdot 4 - 0 \cdot 8$

d $8 \cdot 24 + 2 \cdot 4 - 0 \cdot 6$

e $8 \cdot 56 - 2 \cdot 3 - 0 \cdot 8$

f $8 \cdot 40 + 2 \cdot 5 - 0 \cdot 12$

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5 Choose the correct formula for the determinant of this matrix based on expanding the first row

$$\begin{bmatrix} 7 & 5 & 4 \\ 8 & 8 & 8 \\ 2 & 4 & 7 \end{bmatrix}$$

a $7 \cdot 19 + 5 \cdot 24 + 4 \cdot 16$

b $7 \cdot 22 + 5 \cdot 36 + 4 \cdot 16$

c $7 \cdot 24 - 5 \cdot 44 + 4 \cdot 22$

d $7 \cdot 29 + 5 \cdot 24 + 4 \cdot 16$

e $7 \cdot 24 - 5 \cdot 40 + 4 \cdot 16$

f $7 \cdot 36 + 5 \cdot 28 + 4 \cdot 16$

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6 Choose the correct formula for the determinant of this matrix based on expanding the first row

$$\begin{bmatrix} 2 & 9 & 3 \\ 0 & 7 & 2 \\ 5 & 9 & 2 \end{bmatrix}$$

a $2 \cdot 4 + 9 \cdot 10 - 3 \cdot 35$

b $2 \cdot 5 - 9 \cdot 11 - 3 \cdot 35$

c $2 \cdot 4 + 9 \cdot 15 - 3 \cdot 25$

d $2 \cdot 4 + 9 \cdot 5 - 3 \cdot 49$

e $-2 \cdot 3 - 9 \cdot 7 - 3 \cdot 35$

f $-2 \cdot 6 + 9 \cdot 10 - 3 \cdot 39$

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7 Choose the correct formula for the determinant of this matrix based on expanding the first row

$$\begin{bmatrix} 6 & 9 & 4 \\ 6 & 0 & 4 \\ 0 & 0 & 7 \end{bmatrix}$$

a $1 \cdot 0 - 1 \cdot 42 + 1 \cdot 0$

b $6 \cdot 0 + 9 \cdot 46 + 4 \cdot 0$

c $6 \cdot 0 + 9 \cdot 38 + 4 \cdot 0$

d $6 \cdot 0 - 9 \cdot 34 + 4 \cdot 0$

e $6 \cdot 0 - 9 \cdot 42 + 4 \cdot 0$

f $6 \cdot 0 - 9 \cdot 46 + 4 \cdot 0$