Math worksheet on *'Matrices - Find Determinant Formula (3x3) (Level 1)'*. 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

$$|C| = a_{11} \cdot |M_{11}| - a_{12} \cdot |M_{12}| + a_{13} \cdot |M_{13}|$$
$$C = \begin{bmatrix} 4 & 1 & 5 \\ 0 & 0 & 4 \\ 3 & 7 & 1 \end{bmatrix}$$

a $4 \cdot 28 - 1 \cdot 12 + 5 \cdot 0$

b $1 \cdot 28 + 1 \cdot 12 + 1 \cdot 0$

c $4 \cdot 14 - 1 \cdot 18 + 5 \cdot 0$

d $4 \cdot 28 + 1 \cdot 14 + 5 \cdot 0$

e $4 \cdot 28 + 1 \cdot 12 + 5 \cdot 0$

f $4 \cdot 28 + 1 \cdot 10 + 5 \cdot 0$

2

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

$$|P| = a_{11} \cdot |M_{11}| - a_{12} \cdot |M_{12}| + a_{13} \cdot |M_{13}|$$
$$P = \begin{bmatrix} 5 & 2 & 5 \\ 2 & 8 & 4 \\ 1 & 1 & 5 \end{bmatrix}$$

a $5 \cdot 36 - 2 \cdot 4 + 5 \cdot 0$

b $5 \cdot 36 - 2 \cdot 9 - 5 \cdot 7$

c $5 \cdot 36 - 2 \cdot 6 - 5 \cdot 6$

d $5 \cdot 36 + 2 \cdot 6 - 5 \cdot 6$

e $1 \cdot 36 - 1 \cdot 6 - 1 \cdot 6$

f $5 \cdot 36 - 2 \cdot 6 + 5 \cdot 0$

3

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

$$|C| = a_{11} \cdot |M_{11}| - a_{12} \cdot |M_{12}| + a_{13} \cdot |M_{13}|$$
$$C = \begin{bmatrix} 3 & 0 & 1 \\ 5 & 2 & 0 \\ 9 & 1 & 7 \end{bmatrix}$$

a $3 \cdot 14 - 0 \cdot 35 - 1 \cdot 13$

b $1 \cdot 14 - 1 \cdot 35 - 1 \cdot 13$

c $3 \cdot 14 + 0 \cdot 35 - 1 \cdot 13$

d $3 \cdot 14 - 0 \cdot 49 - 1 \cdot 14$

e $3 \cdot 14 - 0 \cdot 21 - 1 \cdot 16$

f $3 \cdot 14 - 0 \cdot 46 - 1 \cdot 16$

4

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

$$|N| = a_{11} \cdot |M_{11}| - a_{12} \cdot |M_{12}| + a_{13} \cdot |M_{13}|$$
$$N = \begin{bmatrix} 9 & 8 & 0 \\ 8 & 5 & 5 \\ 7 & 5 & 0 \end{bmatrix}$$

a $-9 \cdot 33 - 8 \cdot 39 + 0 \cdot 5$

b $-9 \cdot 25 + 8 \cdot 35 + 0 \cdot 5$

c $-9 \cdot 25 + 8 \cdot 49 + 0 \cdot 8$

d $-9 \cdot 25 - 8 \cdot 35 + 0 \cdot 5$

e $-9 \cdot 38 - 8 \cdot 18 + 0 \cdot 5$

f $-1 \cdot 25 + 1 \cdot 35 + 1 \cdot 5$

5

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

$$|Y| = a_{11} \cdot |M_{11}| - a_{12} \cdot |M_{12}| + a_{13} \cdot |M_{13}|$$
$$Y = \begin{bmatrix} 6 & 0 & 5 \\ 6 & 6 & 8 \\ 7 & 9 & 0 \end{bmatrix}$$

a $-6 \cdot 72 + 0 \cdot 56 + 5 \cdot 12$

b $-6 \cdot 72 + 0 \cdot 84 + 5 \cdot 16$

c $-6 \cdot 72 + 0 \cdot 62 + 5 \cdot 8$

d $-6 \cdot 72 - 0 \cdot 56 + 5 \cdot 12$

e $-6 \cdot 72 + 0 \cdot 62 + 5 \cdot 0$

f $-6 \cdot 72 + 0 \cdot 84 + 5 \cdot 14$

6

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

$$|N| = a_{11} \cdot |M_{11}| - a_{12} \cdot |M_{12}| + a_{13} \cdot |M_{13}|$$
$$N = \begin{bmatrix} 7 & 4 & 6 \\ 6 & 6 & 8 \\ 0 & 1 & 5 \end{bmatrix}$$

a $7 \cdot 20 - 4 \cdot 30 + 6 \cdot 7$

b $7 \cdot 22 - 4 \cdot 30 + 6 \cdot 6$

c $7 \cdot 22 - 4 \cdot 39 + 6 \cdot 3$

d $1 \cdot 22 - 1 \cdot 30 + 1 \cdot 6$

e $7 \cdot 22 - 4 \cdot 33 + 6 \cdot 8$

f $7 \cdot 22 + 4 \cdot 15 + 6 \cdot 6$

7

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

$$|B| = a_{11} \cdot |M_{11}| - a_{12} \cdot |M_{12}| + a_{13} \cdot |M_{13}|$$
$$B = \begin{bmatrix} 3 & 9 & 7 \\ 6 & 2 & 6 \\ 3 & 5 & 6 \end{bmatrix}$$

a $-3 \cdot 18 - 9 \cdot 16 + 7 \cdot 26$

b $-1 \cdot 18 - 1 \cdot 18 + 1 \cdot 24$

c $-3 \cdot 18 - 9 \cdot 18 + 7 \cdot 24$

d $-3 \cdot 25 + 9 \cdot 18 + 7 \cdot 24$

e $-3 \cdot 18 - 9 \cdot 18 + 7 \cdot 34$

f $-3 \cdot 14 - 9 \cdot 18 + 7 \cdot 31$