

Expand a determinant along a specified row

- 1 Using cofactor expansion along the first row, which shows the fully expanded determinant calculation?

$$\begin{bmatrix} 2 & -4 & 7 \\ 8 & 5 & 7 \\ -4 & 3 & 8 \end{bmatrix}$$

- | | |
|---|--|
| A | $2 \cdot (5 \cdot 8 - 3 \cdot 7) - 8 \cdot (-4 \cdot 8 - 3 \cdot 7) + -4 \cdot (-4 \cdot 7 - 5 \cdot 7)$ |
| B | $2 \cdot (5 \cdot 7 - 7 \cdot 3) - -4 \cdot (8 \cdot 7 - 7 \cdot -4) + 7 \cdot (8 \cdot 3 - 5 \cdot -4)$ |
| C | $2 \cdot (5 \cdot 8 - 7 \cdot 3) - -4 \cdot (8 \cdot 8 - 7 \cdot -4) + 7 \cdot (8 \cdot 3 - 5 \cdot -4)$ |

- 2 For the cofactor expansion along the first row, what is the value of the first term?

- | | | |
|---------|---------|---------|
| A
47 | B
51 | C
52 |
| D
42 | E
43 | F
46 |

- 4 What is the determinant of the minor matrix for the entry at row 2, column 1?

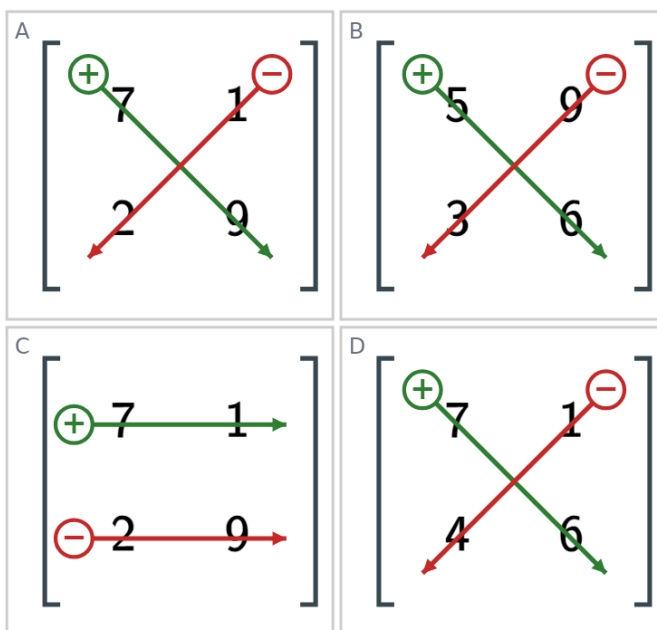
- | | | |
|----------|----------|----------|
| A
-41 | B
-38 | C
-37 |
| D
-32 | E
-42 | F
-35 |

- 5 Which shows how to calculate the determinant of this matrix?

$$\begin{bmatrix} 1 & 4 \\ -4 & 5 \end{bmatrix}$$

- | | |
|---|------------------------------|
| A | $(1 \cdot 5) - (4 \cdot -4)$ |
| B | $(4 \cdot -4) - (1 \cdot 5)$ |
| C | $(1 \cdot 5) + (4 \cdot -4)$ |

- 3 Which diagram correctly finds the determinant of the minor matrix for the entry at row 3, column 1? Green is added, red is subtracted.



- 6 For the cofactor expansion along the first row, which shows the second term?

$$\begin{bmatrix} -7 & 5 & -7 \\ 8 & -3 & 2 \\ 9 & 1 & -3 \end{bmatrix}$$

- | | |
|---|------------------|
| A | $-5 \cdot (-42)$ |
| B | $-7 \cdot (35)$ |