

Overview of problems



Example Set: A

Find the determinant of the following matrices

$$\begin{bmatrix} 4 & 3 \\ -1 & 2 \end{bmatrix}$$

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

$$\begin{bmatrix} 0 & -9 \\ 2 & 6 \end{bmatrix}$$

$$\begin{bmatrix} 12 & 4 \\ -6 & 10 \end{bmatrix}$$



Example Set: B

Evaluate the determinants by expansion

$$\begin{vmatrix} 2 & 0 & 3 \\ 1 & 9 & -1 \\ 4 & 5 & 2 \end{vmatrix}$$

expand along row 1

$$\begin{vmatrix} 3 & -3 & 0 \\ 1 & 5 & 7 \\ 2 & 6 & 2 \end{vmatrix}$$

expand along row 2

$$\begin{vmatrix} -2 & -1 & 3 \\ 0 & 2 & 1 \\ -4 & 5 & 2 \end{vmatrix}$$

expand along row 3



Example Set: C

Evaluate the determinants by using the diagonals

$$\begin{vmatrix} 6 & 0 & 3 \\ 1 & 5 & 0 \\ 1 & 5 & 2 \end{vmatrix}$$

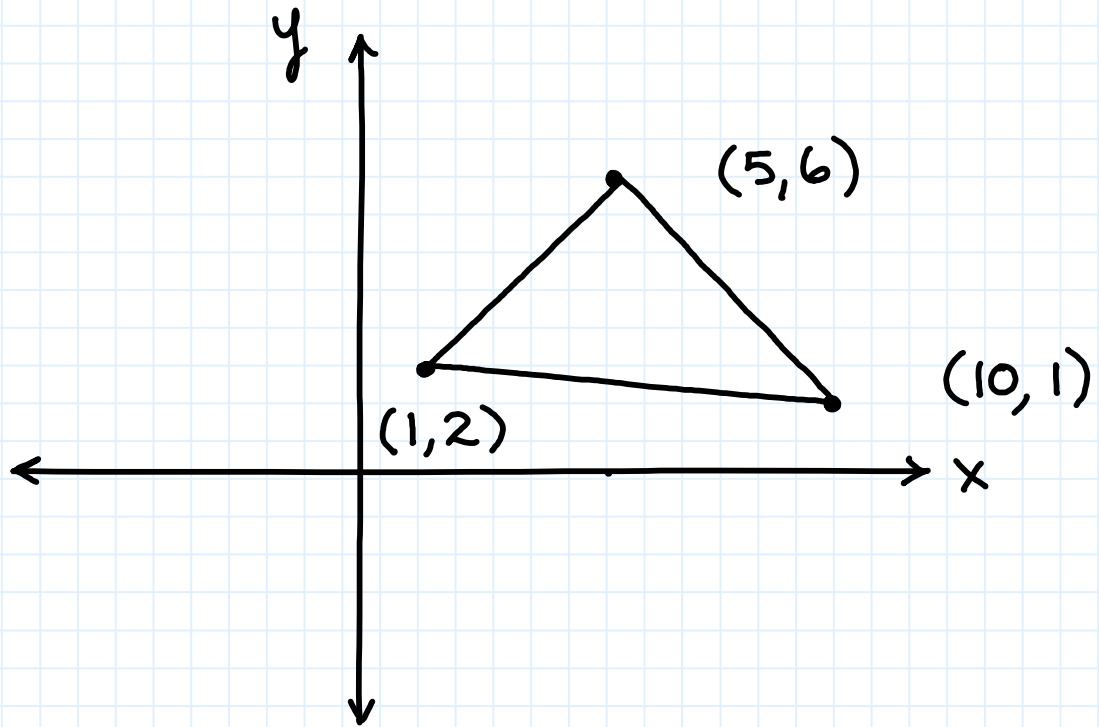
$$\begin{vmatrix} 3 & -3 & 1 \\ 9 & 5 & 1 \\ 2 & 6 & 2 \end{vmatrix}$$

$$\begin{vmatrix} 4 & -2 & 0 \\ 0 & 2 & 1 \\ 7 & 5 & 8 \end{vmatrix}$$



Example Set: D

Find the area of the triangle by using a determinant



Overview of problems- KEY



Example Set: A

Find the determinant of the following matrices

$$\begin{bmatrix} 4 & 3 \\ -1 & 2 \end{bmatrix} \quad 11$$

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

$$\begin{bmatrix} 0 & -9 \\ 2 & 6 \end{bmatrix} \quad 18$$

$$\begin{bmatrix} 12 & 4 \\ -6 & 10 \end{bmatrix} \quad 144$$



Example Set: B

Evaluate the determinants by expansion

$$\begin{vmatrix} 2 & 0 & 3 \\ 1 & 9 & -1 \\ 4 & 5 & 2 \end{vmatrix}$$

expand along row 1

-47

$$\begin{vmatrix} 3 & -3 & 0 \\ 1 & 5 & 7 \\ 2 & 6 & 2 \end{vmatrix}$$

expand along row 2

-132

$$\begin{vmatrix} -2 & -1 & 3 \\ 0 & 2 & 1 \\ -4 & 5 & 2 \end{vmatrix}$$

expand along row 3

-26



Example Set: C

Evaluate the determinants by using the diagonals

$$\begin{vmatrix} 6 & 0 & 3 \\ 1 & 5 & 0 \\ 1 & 5 & 2 \end{vmatrix}$$

60

$$\begin{vmatrix} 3 & -3 & 1 \\ 9 & 5 & 1 \\ 2 & 6 & 2 \end{vmatrix}$$

104

$$\begin{vmatrix} 4 & -2 & 0 \\ 0 & 2 & 1 \\ 7 & 5 & 8 \end{vmatrix}$$

30



Example Set: D

Find the area of the triangle by using a determinant

