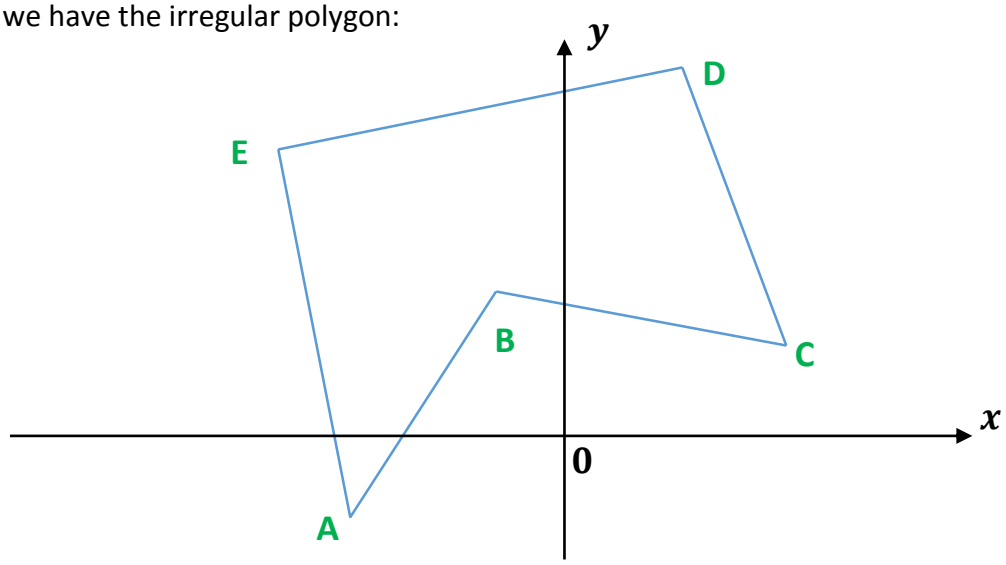
Answer on Question #40455 – Math - Other

Let we have the irregular polygon:



First, we must write down the coordinates of the vertices, because determining the area for an irregular polygon can be found when you know the coordinates of the vertices.

Then create an array:

	x	y
A	-3	-2
B	-1	4
C	6	1
D	3	10
E	-4	9
A	-3	-2

Multiply the x coordinate of each vertex by the y coordinate of the next vertex:

	x	y
A	-3	-2
B	-1	4
C	6	1
D	3	10
E	-4	9
A	-3	-2

$$-3 \cdot 4 = -12$$
$$-1 \cdot 1 = -1$$
$$6 \cdot 10 = 60$$
$$3 \cdot 9 = 27$$
$$-4 \cdot (-2) = 8$$
$$\mathbf{82}$$

The added sum of these products is 82.

Multiply the y coordinate of each vertex by the x coordinate of the next vertex:

	x	y
A	-3	-2
B	-1	4
C	6	1
D	3	10
E	-4	9
A	-3	-2

$$-2 \cdot (-1) = 2$$
$$4 \cdot 6 = 24$$
$$1 \cdot 3 = 3$$
$$10 \cdot (-4) = -40$$
$$9 \cdot (-3) = -27$$
$$\mathbf{-38}$$

The added sum of these products is -38.

Subtract the sum of the second products from the sum of the first products:

$$82 - (-38) = 120$$

Divide this difference by 2 to get the area of the polygon:

$$A = \frac{120}{2} = 60$$

This is the method to find the area of the irregular polygons.