Step-1

(a)

The area of a triangle with coordinates of its three points $(x_1,y_1),(x_2,y_2)$ and (x_3,y_3) is computed by the below formula:

$$\text{Area}(\Delta)=\frac{1}{2}\begin{vmatrix} x_1 & y_1 & 1 \\ x_2 & y_2 & 1 \\ x_3 & y_3 & 1 \end{vmatrix}$$.â€¦.. (1)

Step-2

From the question, the three coordinates of the triangle are $(2,1),(3,4)$ and $(0,5)$. Substitute the coordinates in equation (1) to compute the area of the triangle:

$$\begin{aligned}\text{Area}(\Delta)&=\frac{1}{2}\begin{vmatrix} 2 & 1 & 1 \\ 3 & 4 & 1 \\ 0 & 5 & 1 \end{vmatrix} \\ &=\frac{1}{2}\left(2\cdot(4-5)+3\cdot(5-1)+0\cdot(1-4)\right) \\ &=\frac{1}{2}(10) \\ &=5\end{aligned}$$

The area of the triangle is $\boxed{5\,\text{square unit}}$.

Step-3

(b)

Due to a new corner $(-1,0)$,the area of the lopsided figure is the sum of the area of triangle calculated in part **(a)** and the area of the triangle formed by the three coordinates $(2,1),(0,5)$ and $(-1,0)$.

Step-4

Substitute the coordinates $(2,1),(0,5)$ and $(-1,0)$ in the expression (1) of part **(a)** to calculate the area of the triangle:

$$\begin{aligned}\text{Area}(\Delta) &= \frac{1}{2}\begin{vmatrix} 2 & 1 & 1 \\ 0 & 5 & 1 \\ -1 & 0 & 1 \end{vmatrix} \\ &= \frac{1}{2}\left(2\cdot(5-0)+0\cdot(0-1)-1\cdot(1-5)\right) \\ &= \frac{1}{2}(10+4) \\ &= 7\end{aligned}$$

Hence, the area of the lopsided figure is the sum areas of two triangles calculated in part **(a)** and part **(b)**:

$$\begin{aligned}\text{Area} &= 5+7 \\ &= 12\end{aligned}$$

Therefore, the area of the lopsided figures comes out to be $\boxed{12\,\text{square unit}}$.