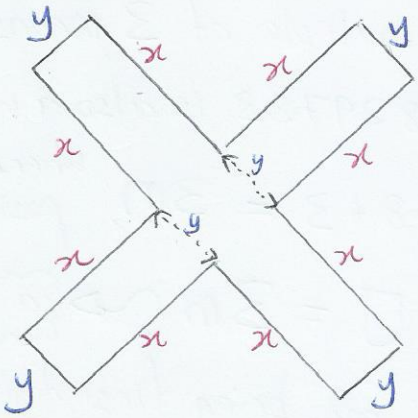
A1



We're given that:

(i) Perimeter = 24 $\rightarrow$ $8x + 4y = 24$ $\rightarrow$ $2x + y = 6$ — (1)

$\rightarrow$ $y = 6 - 2x$ — (2)

(ii) Area = 24.

$$(2x + y) \times y + 2x(xy) = 24$$

$$(6)xy + 2x(xy) = 24 \quad \text{(using (1))}$$

$$6y + 2xy = 24$$

$$3y + xy = 12$$

$$3(6 - 2x) + x(6 - 2x) = 12$$

$$18 - 6x + 6x - 2x^2 = 12$$

$$18 - 2x^2 = 12$$

$$2x^2 = 18 - 12$$

$$2x^2 = 6$$

$$x^2 = \frac{6}{2}$$

So, $x^2 = 3$

Answer: 3