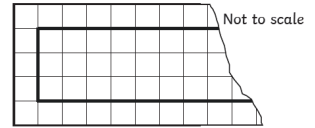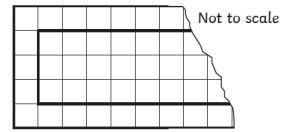# L.O. Shapes – same area ANSWERS

Reasoning 1

Will was measuring the area of two rectangles with sides that are a whole number of centimetres long, before they were ripped.

Not to scale

Not to scale

a) This statement could be true. Although one of the rectangles has a visible length of 10cm and the other rectangle has a visible length of 8cm, this may just be where the paper was ripped. Because both rectangles share a definite width of 3cm, both rectangles could have once had the same area.

b) This statement is true. In the first rectangle, one of the sides measures 3cm. We can also see that there are at least 8 fully visible or part-visible 1cm squares along the longest side. The smallest area his shape could be is therefore 8cm × 3cm = 24cm²

c) This statement can not be true. The shapes have a side length of 3cm. All of the possible areas for the shapes would need to be multiples of 3 and 32 is not a multiple of 3.

Reasoning 2

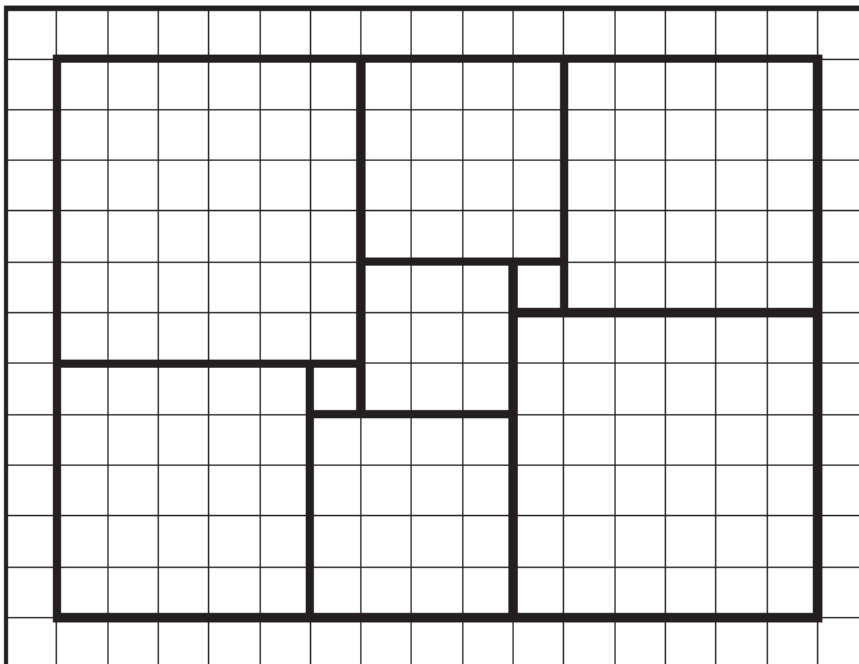Investigate Dexter's statement to see if it is true.

It is impossible to have a rectilinear shape with an even area if all its sides are odd numbers.

Dexter is correct.

When we find the area of a rectilinear shape, we need to multiply the side lengths together. When an odd side length is multiplied by another odd side length, we will always get an odd number area. O x O = O

Problem Solving

a)

b) 165cm²