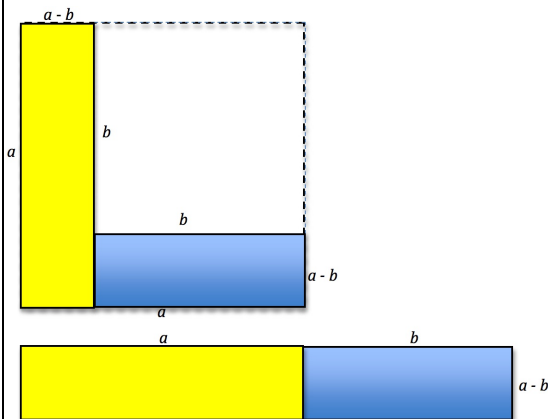


DIFFERENCES OF SQUARES AND AREA



ACTIVITY FOR ALL AGES

What do you see in this image?

Cut out your own square from scrap paper (any size).

Cut away a smaller square to form an L shape.

Cut your L shape into two rectangles as shown.

Arrange your two rectangles to make a single long thin rectangle as shown.

What can you deduce from your experiment?

What is the area of the bigger square edged by dotted line segments of length a in terms of a ?

What is left of that area if you take away a square with edges of length b ?

What is the area of the rectangle formed by the yellow and blue rectangles placed end to end?

What can you deduce from this?

HELP

You could cut a copy of the diagram into pieces and rearrange the pieces in different ways.

This is all about area and connecting areas of rectangles with multiplication of numbers and multiplication of algebraic expressions.

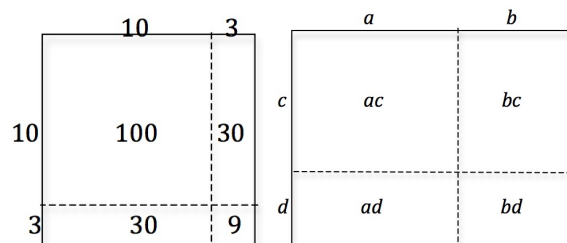
Here are two other examples.

Perhaps they will help you with the difference of two squares.

Can you explain why one shows

$13 \times 13 = 169$ and the other shows

$(a + b)(c + d) = ac + ad + bc + bd$?



NEXT

Can you write all the numbers from 1 to 10 as the difference of two squares?

For example $3 = 2^2 - 1^2$.

