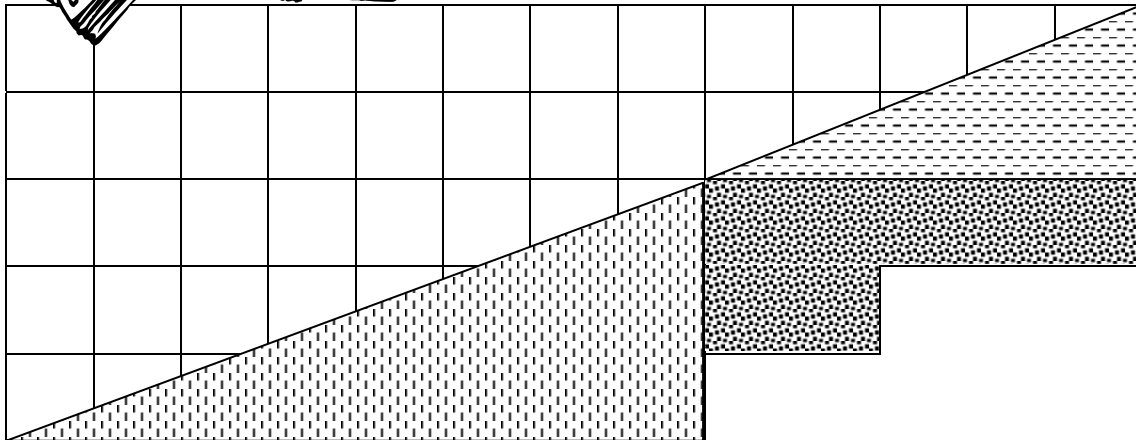


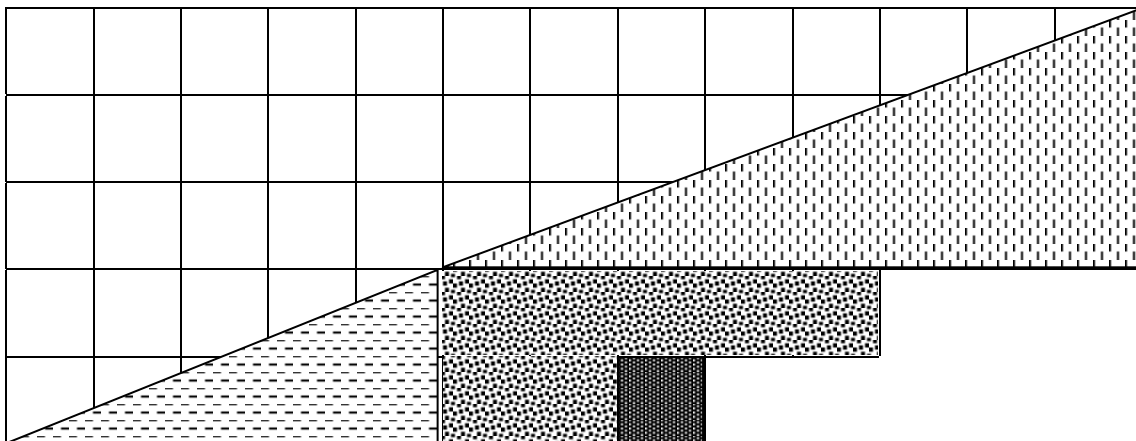
Extra! Extra!

This is an interesting puzzle that will keep you baffled for a while.



The lower-right half of the grid above (measuring 13 x 5 squares overall) has been divided up into 2 triangles and two shapes – a “speckled” one (taking up 7 little squares) and a “plain” one (taking up 8 little squares).

These shapes have been moved into the lower-right half of the grid below (also measuring 13 x 5 squares overall). The triangles have been swapped over (but are still the same size as they were before) and the speckled shape has had to move along a bit (though it still takes up 7 squares).



But wait a minute! NOW there is an EXTRA shape – a dark-coloured SQUARE. How is there space to fit in an extra square?

For an animated version of this puzzle, see www.e-fun.nu/mindbreakers/gold/htm



Extra ! Extra ! Explanation.

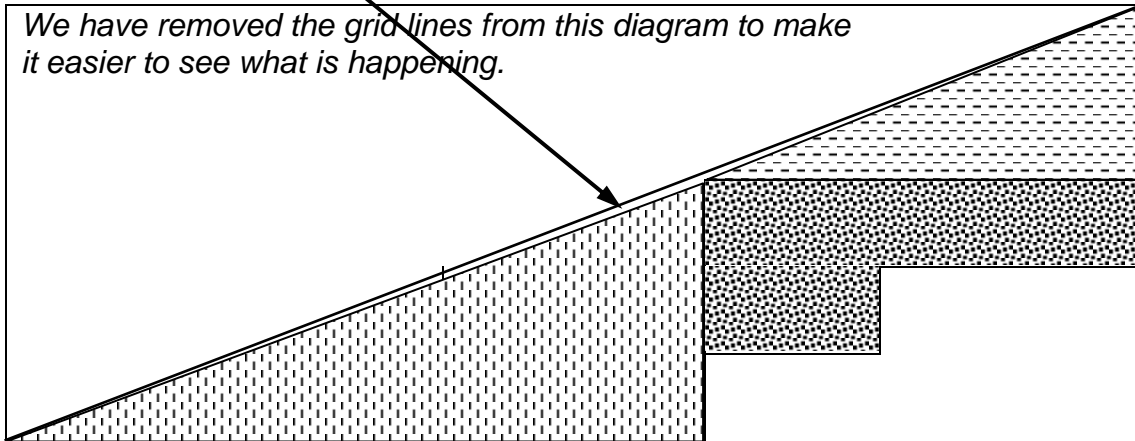
If you draw a straight line from top-right to bottom-left corners, you will notice that the two triangles do not line up with this new diagonal you have drawn.

The new large triangle formed by the line you have drawn has an area of 32.5 squares (half of $13 \times 5 =$ half of $65 = 32.5$)
 BUT the area of the smaller pieces adds up to 32.

Big triangle = 12
Little triangle = 5
Speckled shape = 7
Plain shape = 8
<u>TOTAL = 32</u>

Which means that THIS thin piece has an area of 0.5 square.

We have removed the grid lines from this diagram to make it easier to see what is happening.

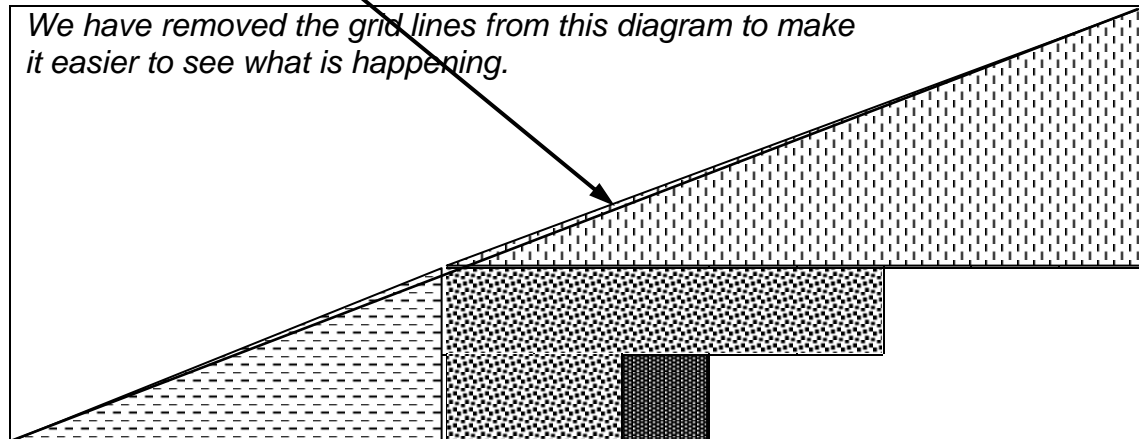


In the **SECOND** diagram (below), the triangle formed by the line you have drawn has an area of 32.5 squares (half of $13 \times 5 =$ half of $65 = 32.5$) BUT the area of the smaller pieces adds up to 33.

Big triangle = 12
Little triangle = 5
Speckled shape = 7
Plain shape = 8
<u>Extra square=1</u>
<u>TOTAL = 33</u>

Which means that THIS thin piece also has an area of 0.5 square.

We have removed the grid lines from this diagram to make it easier to see what is happening.



This is even easier to see if you cut out TWO lots of the various shapes and fit them BOTH onto a 13 x 5 grid.

It is not really a mathematical puzzle but an optical illusion. Easy really.

