Warm-Up

Write the equation 7 = 7 on the smaller rectangle. Take an uncut rectangle. Place the two smaller rectangles together so they fit on the whole uncut rectangle. What is the area of the two smaller rectangles together? [56]

Has the area of the rectangle changed because it was cut into 2 pieces? [no]

If our original equation was $7 \times 8 = 56$, then discuss with your desk partner what our new equation would look like now that it has been broken apart and write this in your notes. I will give you two minutes to write down the new equations. (After 2 minutes, share student work. Below is a good example to share.)

Example:

$$(7 ! 7) + (7 ! 1) = 56$$

 $49 + 7 = 56$
 $56 = 56$
You can break apart one factor
and multiply each part with the
other factor to get partial
products which when added,
equal the whole product

Take an uncut rectangle. Turn it so the base is 8 and the height is 7. Cut three rows off all together on the bottom. With your partner label each rectangle with an equation showing its factors and product. Then write a new equation for $7 \quad 8 = 56$ in your notes now that it is broken apart into the new pieces. (Share student work. Below is a good example to share.) Put these aside

Example:

$$(8 \times 4) + (8 \times 3) = 56$$

 $32 + 24 = 56$
 $56 = 56$
You can break apart
factors to make partial
products and still ge6 0 0 C

Now take out the piece of graph paper. On one of the rectangles with the dimensions 6 18, which are our factors from problem # 34 on our warm-up, divide the rectangle into two parts and shade one part using your pencil. Which factor did you break-apart? Take several answers. So, there are many ways to break up the factors. If I broke-apart the 18 using expanded notation, what would I write down? [10 + 8]

Write the equation 10 + 8 - 18 on the bottom of the graph paper. On the second rectangle divide the rectangle into two parts based upon expanded notation. Break up the side that has 18 into 10 and 8. Label each part with the equation you would use to solve for partial product.

Which equation did you write for the larger area?