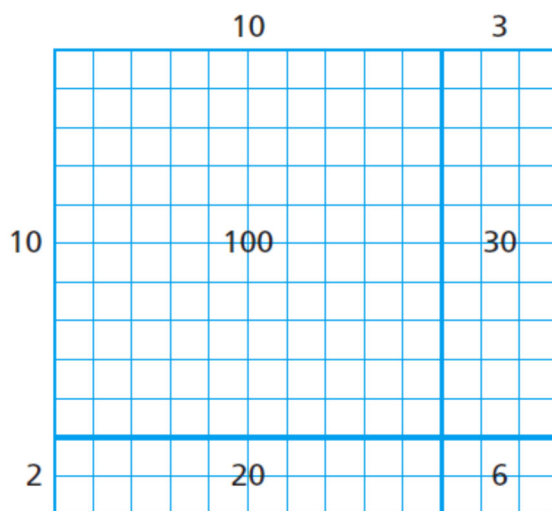


Name: _____

Date: _____

Learning Goal 3.3	Factor trinomials of the form $ax^2 + bx + c$.
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Thinking of multiplication as an area model again, consider the multiplication statement 12×13

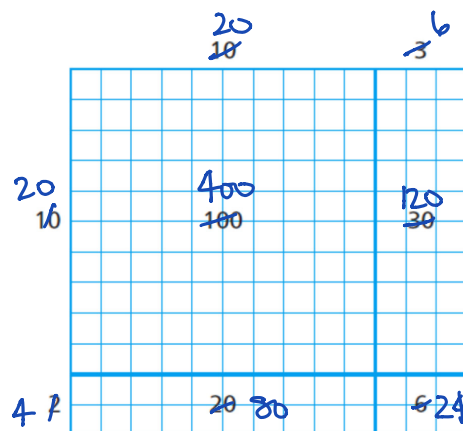


- Split $13 = 10 + 3$
 - Split $12 = 10 + 2$
 - $10 \times 10 = 100$
 - $3 \times 10 = 30$
 - $2 \times 10 = 20$
 - $2 \times 3 = 6$
- } $156 = 12 \times 13$

This model assumes each of the small squares has a side length of 1 unit, and an area of 1 unit².

Give each space a different value and reconsider what the value of the overall area could be.

- Side length of the small square: 2 units
- Area of the small square: $2 \times 2 = 4 \text{ units}^2$.



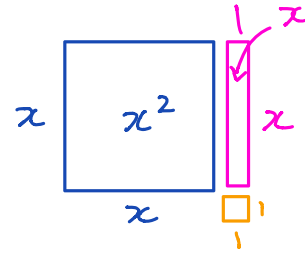
$24 \times 26 =$

624 units²

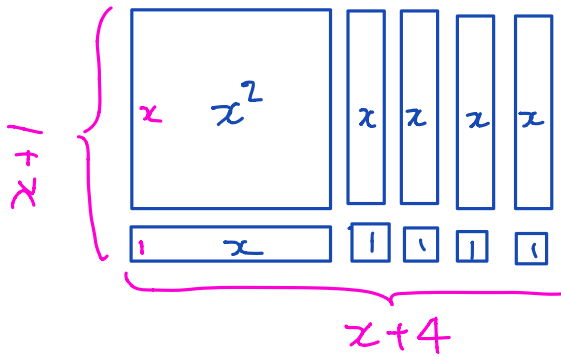
Area of the overall rectangle:

Now what happens if you don't know the value of the side length?

- big square - side length x
- area x^2
- stick - long length x
- short length 1
- area x
- little square - side length 1
- area 1



Using a single x^2 tile and as many of the others as you like, create a rectangle. What expression do your tiles represent?



$$x^2 + 5x + 4$$

these are equal.

Write out the multiplication statement for this area.

$$(x+1)(x+4)$$

Compare with your group. What patterns do you see in your factors and products? Can you come up with a faster way?

Make a different rectangle.