Ms. Q.

Big Rectangles

Have you all finished drawing your rectangles?

Almost done...
...I want to make sure my lines are straight.

Here’s mine.

Rectangle?

I drew a tangled wreck.

Can you find the area of your rectangles?

Mine is 7 squares tall...

...and 13 squares wide...

...so I need to multiply 7 times 13.

Can you think of a way to make finding the area easier?

What could we do to make finding the area of Lizzie’s rectangle easier?
What if we split Lizzie’s rectangle into two smaller rectangles? We can find the areas of both small rectangles. Then, we can just add those areas together!

This line separates her 7 by 13 rectangle into two rectangles. One is 7 by 10, and the other is 7 by 3. Both of those areas are easy to figure out!

7 \times 10 = 70.
7 \times 3 = 21.
So 7 \times 13 = 70 + 21 = 91!

Great idea! What is the best way to split Lizzie’s rectangle in two?

Do mine! Do mine!

My rectangle is 3 by ummm...

...52!

Can you find the area of Grogg’s rectangle?
We can split it into smaller rectangles like this.

Five of them are the same... \(3 \times 10 = 30\).

This little one on the end is \(3 \times 2 = 6\).

So the five big rectangles have a total of \(5 \times 30 = 150\) squares...

...plus these six on the end makes 156 total!

Instead of breaking it into lots of rectangles, we can just use two!

This big one is \(3 \times 50 = 150\) squares...

...and then we add the six squares on the end to get 156.

It doesn’t matter how you split up the rectangle, as long as you remember to add all the pieces to get the total area.

And when you split it into pieces, it is usually best to use multiples of 10.

Me! My rectangle is 9 by 18.

Very good! Who’s next?

When you multiply a number by 10, the number you get is called a multiple of 10. For example, the numbers 10, 60, and 140 are all multiples of 10.
You can split it into one rectangle that is 9 by 10, and one that is 9 by 8...

\[
\begin{array}{|c|c|}
\hline
9 \times 10 & 9 \times 8 \\
\hline
90 & 72 \\
\hline
\end{array}
\]

If we add these two areas together, we get 90 + 72 = 162!

I did it differently. You can split the rectangle in half.

That makes two 9 by 9 squares...

\[
\begin{array}{|c|c|}
\hline
9 \times 9 & 9 \times 9 \\
\hline
81 & 81 \\
\hline
\end{array}
\]

...and doubling 81 gives us 162.

I guess you don’t always need to use multiples of ten.

Not always, but it’s usually a good idea. Can we find the area of yours next, Alex?

Sure. Mine is really easy!

Why is that?

It’s a perfect 10 by 10 square.