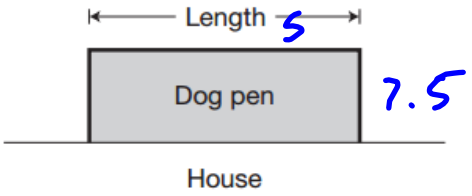
Warm-up

Determine the correct answer and be prepared to support your answer.

$4 \times 8 = 32$

5×7.5

Marcus is building a rectangular dog pen along the side of his house as shown below.



Marcus has 20 m of fencing for the 3 sides of the dog pen.

What is the length of the dog pen with the maximum area?

a 4 m

b 5 m

c 10 m

d 12 m

Explore

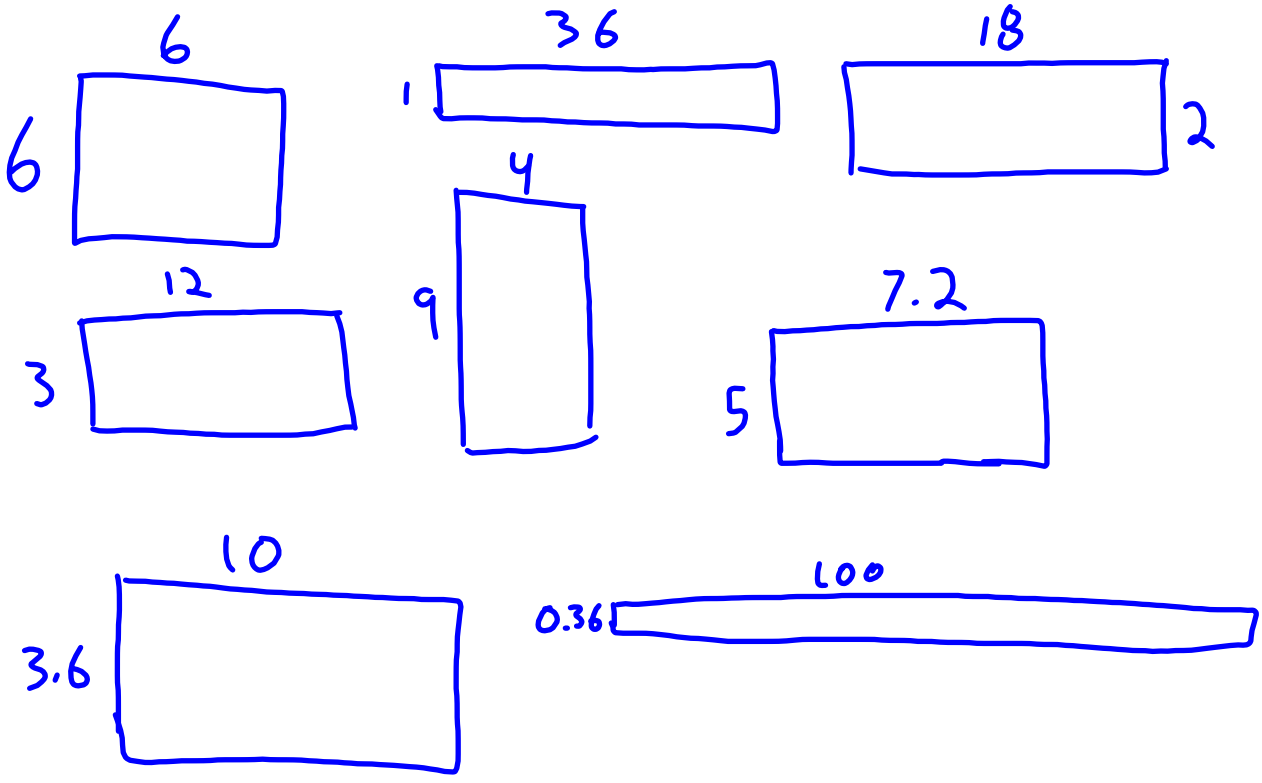
Yesterday we looked at how rectangles with the same perimeter can have different areas.

Is the reverse true?

If two rectangles have the same area will they have the same perimeter?

Explore

Build or draw as many rectangles as you can that have an AREA of 36 square units.

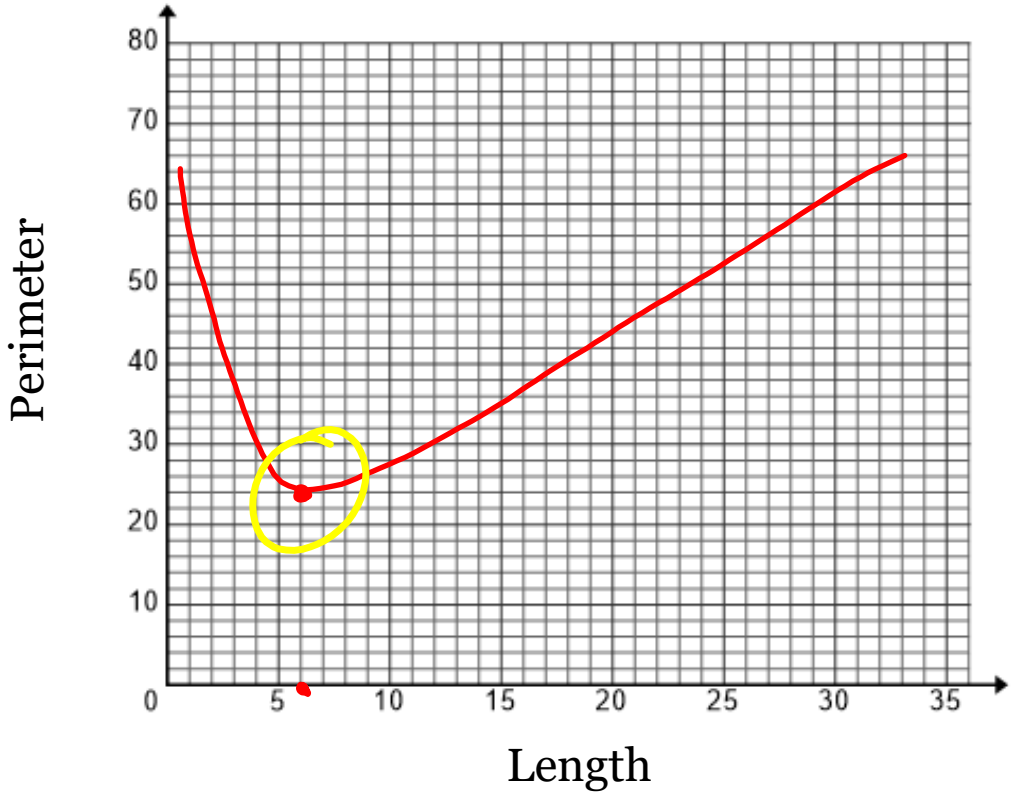


Organize your information

Area	Length	Width	Perimeter
36	1	36	2(1+36) = 74
36	2	18	40
36	3	12	30
36	4	9	26
36	5	7.2	24.4
36	6	6	24
36	7	5.1	24.2
36	8	4.5	25
36	9	4	26
36	10	3.6	27.2

If you want to use the least amount of materials to put a fence around this area, which dimensions should you choose?

Graph



Practice

1. If you are creating a space that has an area of 25m^2, what dimensions would minimize the perimeter?

   $\sqrt{25} = 5$ 5m × 5m

2. If you are creating a space that has an area of 100m^2, what dimensions would minimize the perimeter?

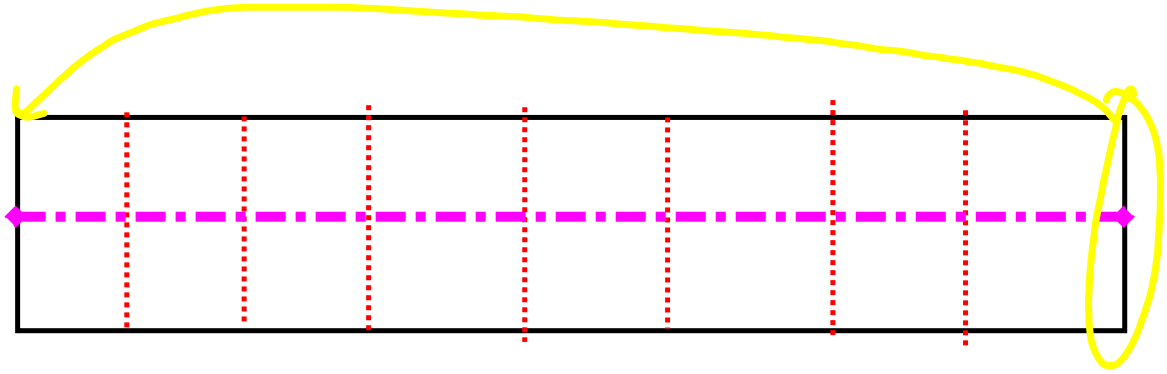
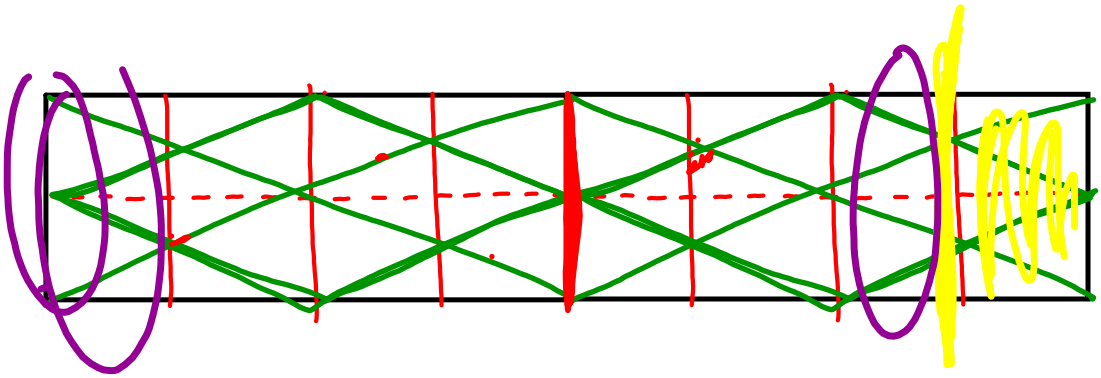
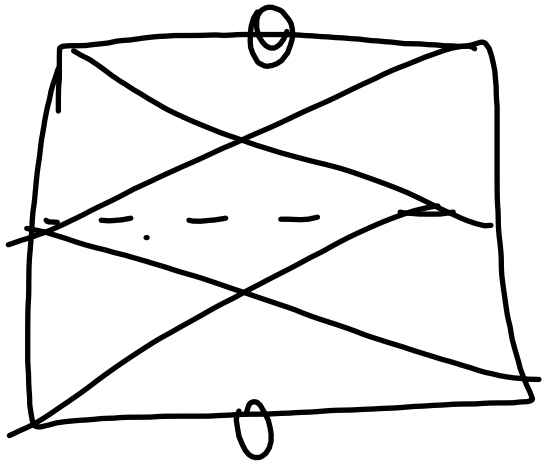
   $\sqrt{100} = 10$ 10 × 10

3. If you are creating a space that has an area of 40m^2, what dimensions would minimize the perimeter?

   $\sqrt{40}$ 6.32 × 6.32

Summary

If a friend missed today's class how would you explain how to find the dimensions of a rectangle with the smallest perimeter if you were given the area.

Making a hexaflexagon

(I think that's what it's called)