

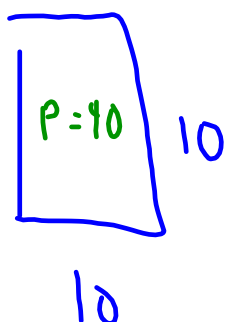
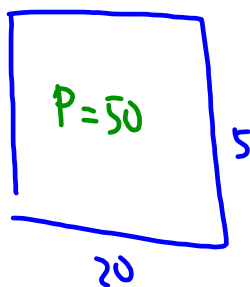
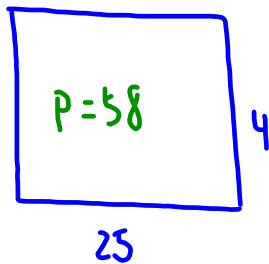
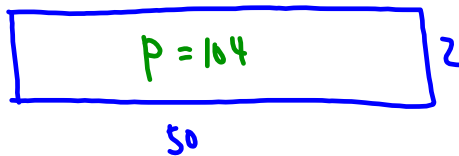
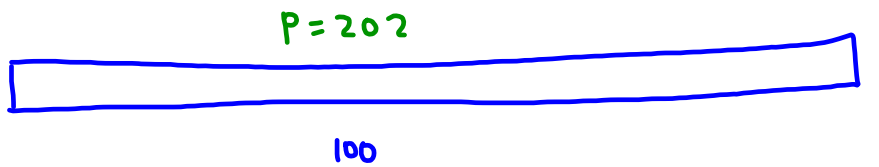
COMPARING EQUIVALENT FIGURES AND SOLIDS

Goals:

- to understand which shapes optimize perimeter and area or surface area and volume

Given rectangles that are equivalent, what dimensions will produce the rectangle with the smallest perimeter?

Using 100 cm^2 :



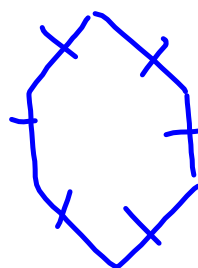
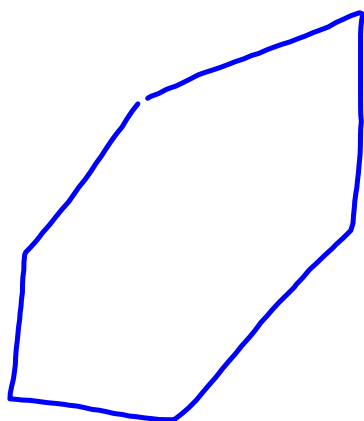
Given equivalent rectangles, a square will have the smallest perimeter.

and

Given rectangles with the same perimeter, a square will have the greatest area.

Given triangles that are equivalent, what dimensions will produce the smallest perimeter?

same principle as with rectangles.

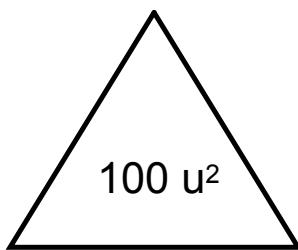


Given equivalent triangles, an equilateral triangle will have the smallest perimeter.

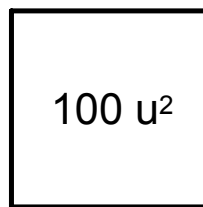
Given any n -sided equivalent polygons, the regular polygon will have the smallest perimeter.

↓
all sides have same
length

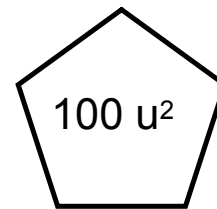
Given different polygons that are equivalent, which shape will minimize the perimeter?



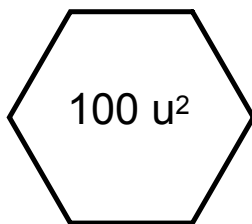
$$P = 45.6$$



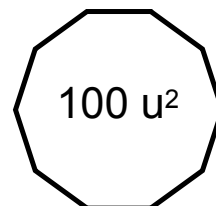
$$P = 40$$



$$P = 38$$



$$P = 37.2$$



$$P = 36$$

The regular polygon with the largest number of sides will have the smallest perimeter.

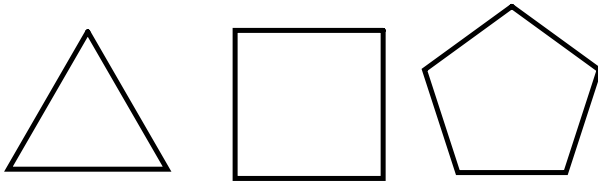
and

Given regular polygons with the same perimeter,
the one with the most sides will have the greatest area.

In fact, a circle will have the smallest perimeter for
a fixed area and biggest area for fixed perimeter.

p. 121 #1, 2, 5

#1.



#2.



Given equivalent polygons, the shape with the most sides will