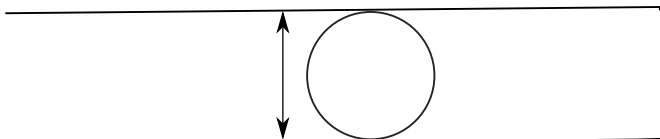


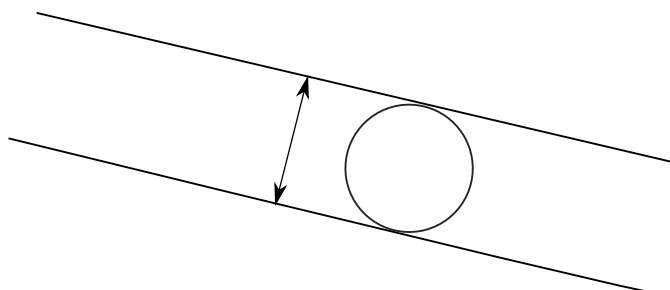
Shapes of constant width

1. Investigate constant width

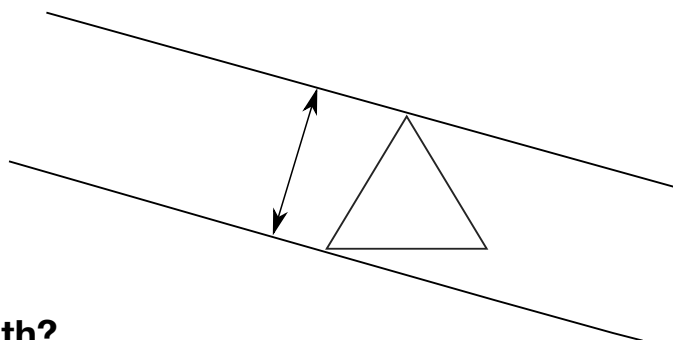
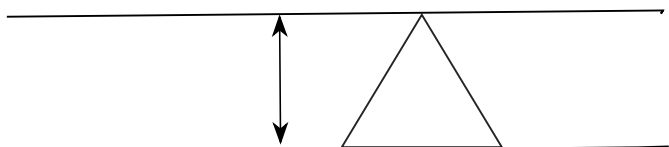
Find two straight edges on two pieces of card, and place them parallel so each one touches opposite sides of the circle. Measure how far apart they are.



Keeping the cards parallel, does this distance change if you change the angle of the cards so that different bits of the circle touch the cards?

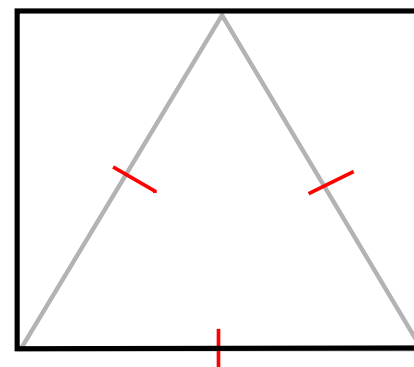
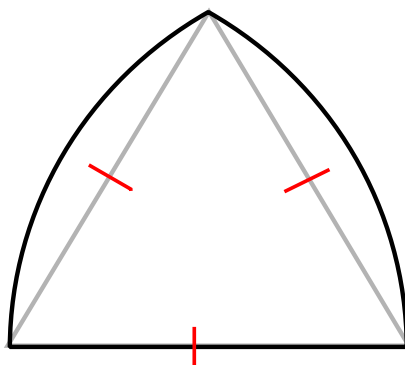
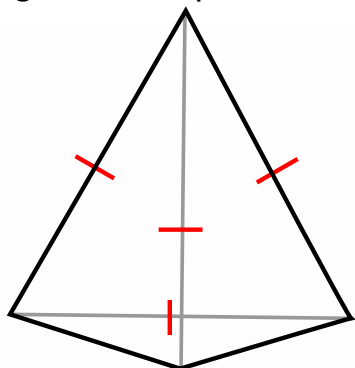


Now try it for the equilateral triangle. Does the distance change if you change the angle, again keeping the edges of the card parallel?



2. Why are these not shapes of constant width?

If a shape has the same width in every direction, it has **constant width**. Without measuring, find convincing reasons why none of these shapes based on the equilateral triangle are shapes of constant width.



Can you use these to help you construct a shape based on the equilateral triangle that is a shape of constant width?