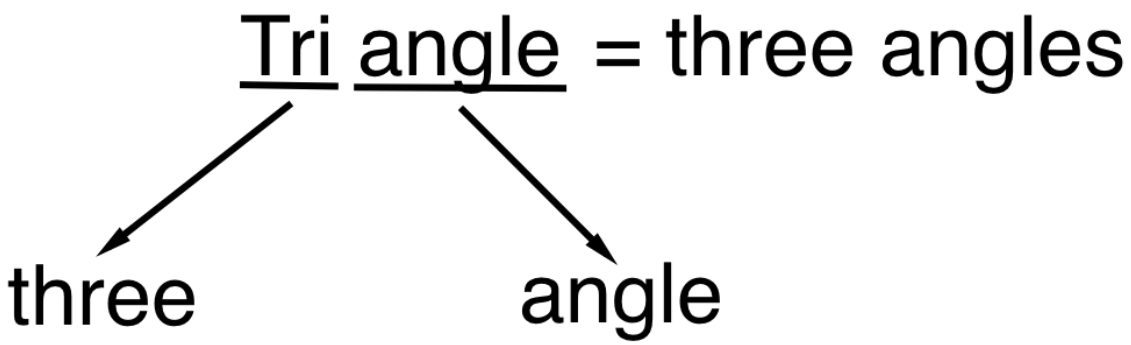
Math Circles - Geometrical Objects on The Plane

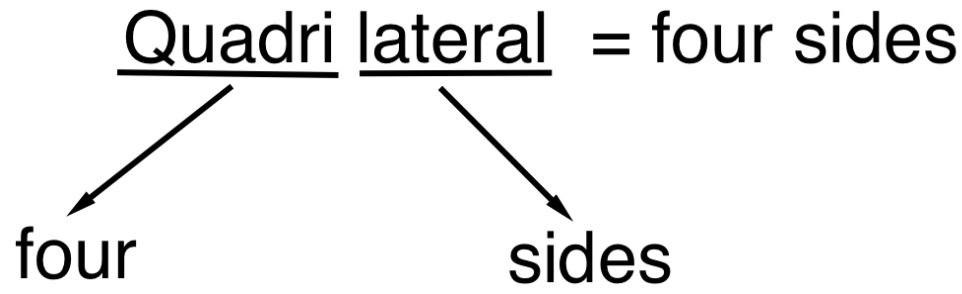
What can you make with 0 stick?

What can you make with 1 stick?

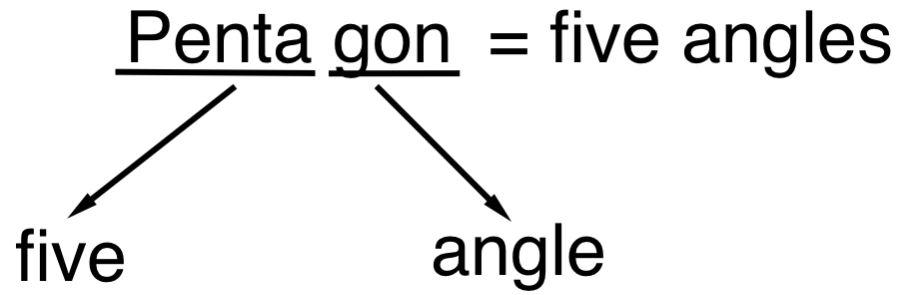
What can you make with 2 sticks?

What can you make with 3 sticks?





Can you make a quadrilateral?

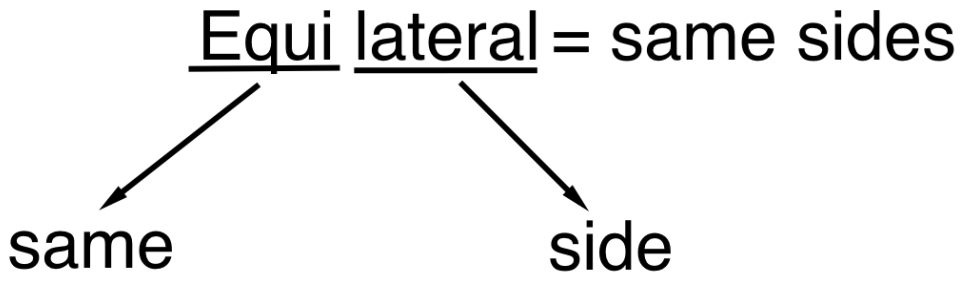


Can you make a pentagon?

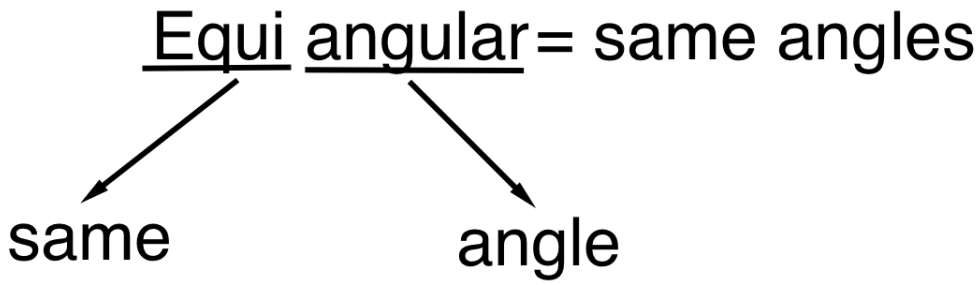
Hexa = six
Can you make a hexagon?

Hepta = seven
Can you make a heptagon?

Octa = eight
Can you make an octagon?



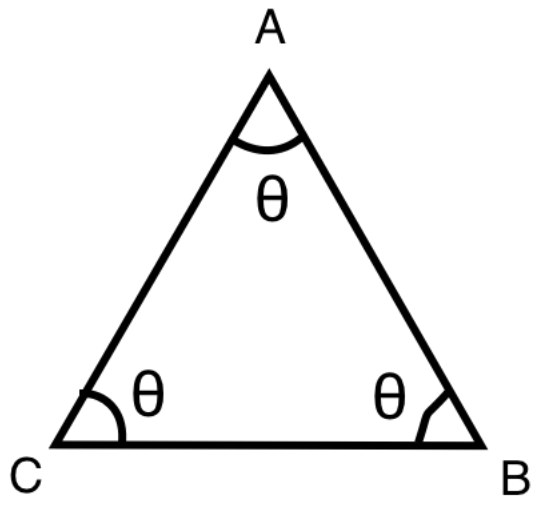
Let's make an equilateral triangle.



Let's make an equiangular triangle.

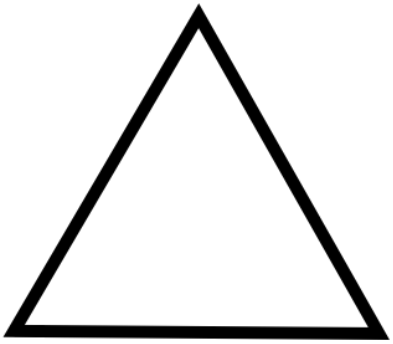
The sum of all the angles in a triangle is 180°

Find θ

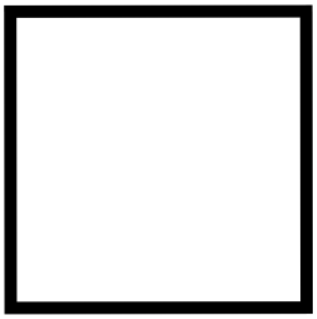
	$\theta + \theta + \theta = 180°$ So $\theta =$

$$\angle BAC =$$
$$\angle ABC =$$
$$\angle ACB =$$

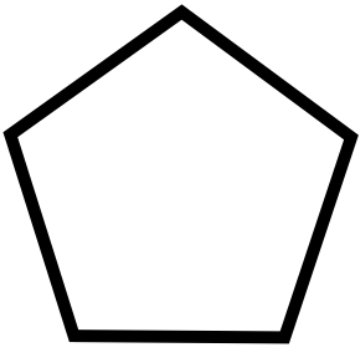
Example of Simple Polygons



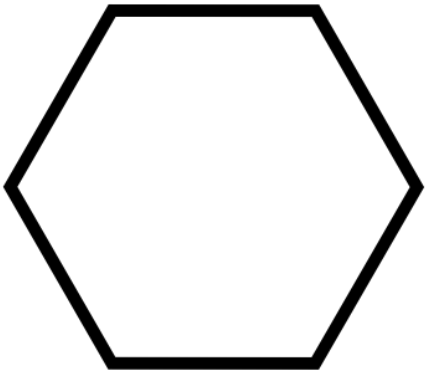
n = 3 (simplest)
triangle



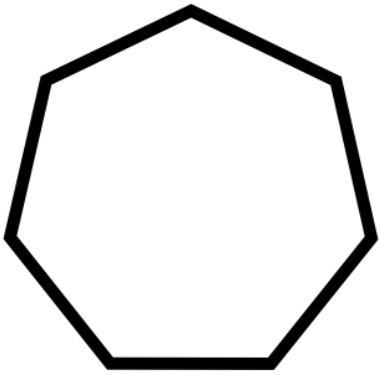
n = 4
quadrilateral



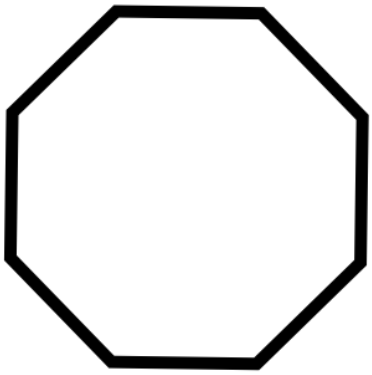
n = 5
pentagon



n = 6
hexagon



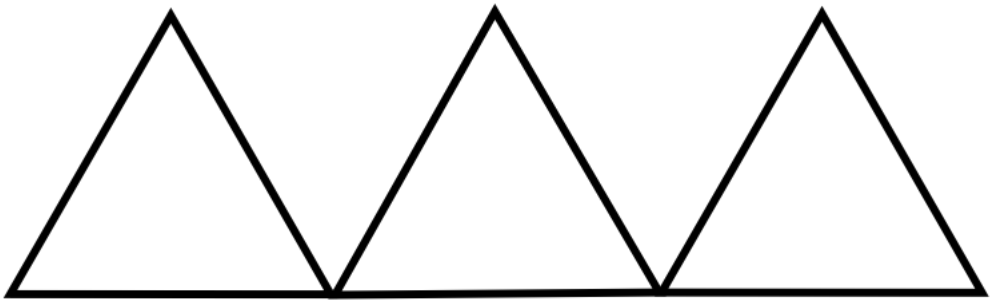
n = 7
heptagon



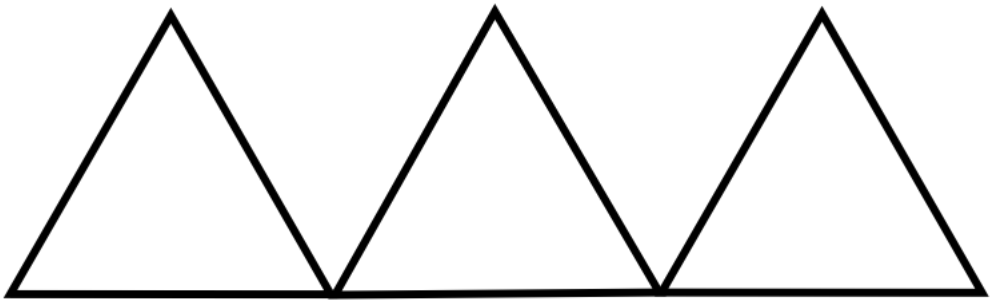
n = 8
octagon

Homework

1. Move 2 sticks to make 4 triangles.



2. Move 3 sticks to make 4 triangles



3. What is θ?