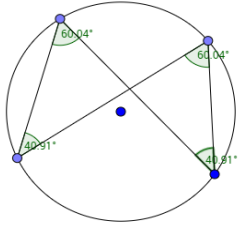


## Goals



By the end of this unit, students:

- understand the concepts and techniques in combinatorics, geometry and vectors
- apply reasoning skills and solve problems in combinatorics, geometry and vectors
- communicate their arguments and strategies when solving problems
- construct proofs in a variety of contexts including algebraic and geometric
- interpret mathematical information and ascertain the reasonableness of their solutions to problems.

**This week's focus:**

Angle Properties in a Circle  
Intersecting Chords

## Theoretical Components

STEP 1:

Read notes and study examples:

- Mathsisfun: <https://goo.gl/boLQuo>
- AMSI: <http://goo.gl/DXqhPg>

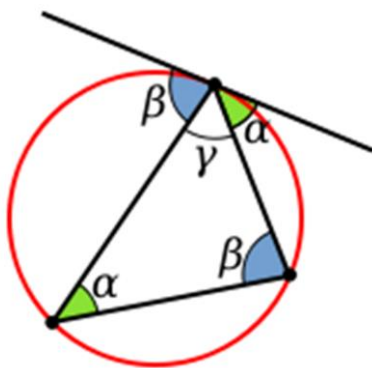
Interesting reading on Geometric Shapes and Their Symbolic Meanings:

<https://bit.ly/2IvLw7B>

Video Tutorial: <https://goo.gl/iwZvBo>

Review of Mathematical Induction:

- <http://goo.gl/rCTUQt>
- <http://www.themathpage.com/aprecalc/mathematical-induction.htm>



## Practical Components

STEP 2:

Attempt 6 questions from each of 10A-C.

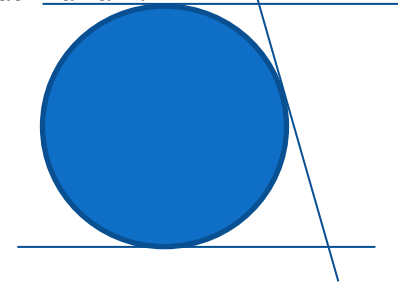
Attempt at least 10 questions here from each set:

<https://goo.gl/boLQuo>

<https://bit.ly/3e9cdA8>

## Investigation

Two parallel tangents to the circle, with centre O, meet the circle at points M and N. A third tangent to the circle, at point P, meets the other two tangents at K and L.



i) Prove that KO bisects angle MKP.

ii) Hence show that a circle with a diameter KL passes through the centre O of the original circle.

20 marks – see rubric.