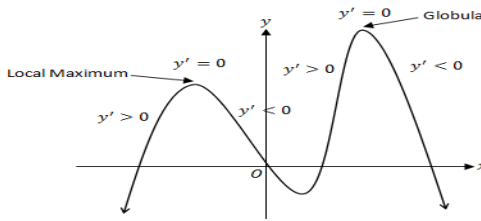


## Goals

By the end of this week, you should be able to:

- Use derivatives to solve practical problems
- Identify turning points and points of inflection
- Find the second derivative



## Theoretical Components

### STEP 1

Resources:

Maths Quest Year 12 Chapter 7 (printed copy),  
and Chapter 8 (pdf on Google Drive)

### Identifying Turning Points and Points of Inflection

Lesson

<https://mathspace.co/teach2/chapter/38962/1969/>

### Second Derivative

Lesson

<https://mathspace.co/teach2/chapter/38966/1974/>

## Second – Derivative Test

Let  $f'(c) = 0$  and let  $f''$  exist on an open interval containing  $c$ .

1. If  $f''(c) > 0$ , then  $f(c)$  is a relative minimum.
2. If  $f''(c) < 0$ , then  $f(c)$  is a relative maximum.
3. If  $f''(c) = 0$  then the test fails. Use the First Derivative Test.

## Practical Components

### STEP 2

Attempt the following questions and leave out the logarithmic problems

#### Mixed Problems on Differentiation

Exercise 7J Q1 - 3

#### Identifying Turning Points and Points of Inflection Quiz

<https://mathspace.co/solve/adaptiveworkout/38962/embark/#p/87377938/pt/34181>

#### Mixed Problems on Differentiation and Applications

Exercise 8B Q1.b,g,k,l; Q2.b,g,k; 7; 12;13

Exercise 8C Q1.a,b,d,f; Q6; 9;10

Exercise 8D Q1.1,3,4,6

## Investigation/Journal

### STEP 3

No new investigation. Complete your journal entry.

Work on your assignment.

**QFO**

Quiz/Forum/Other

Remember to scan in when you come to the Maths Area and when you leave.