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## Scrollbar Examples

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# Scrollbar Examples

## **Abstract**

Scrollbars - some brief examples: Mercator, Derivatives & 2D Transformations

## **Keywords**

scrollbar examples, mercator, derivatives, 2D transformations

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# Demonstration Spreadsheets

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The spreadsheets that are linked to this document provide a range of applications that make use of the scrollbar facility in Excel. This gives them an interactivity that is under control of the user and they can be used to answer specific questions about the contexts that they cover.

The purpose in including these examples here is to show the range of applications that Excel can support and the kind of interactivity that it makes possible.

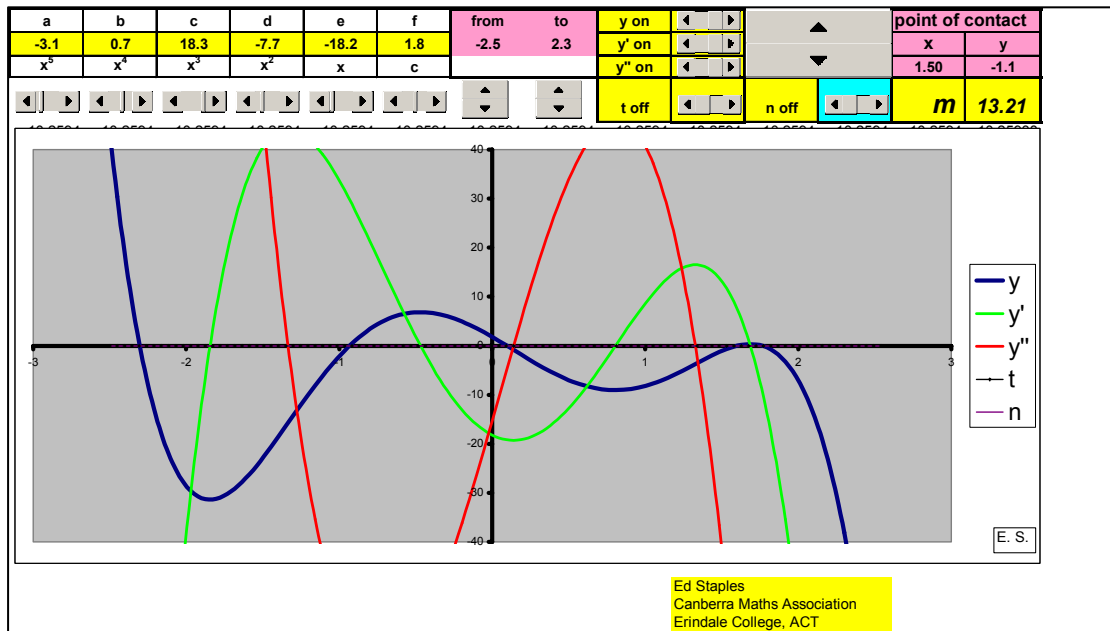
To access the original spreadsheets, please download them from the eJSiE website.

## Derivatives

The user can control the parameters  $a - f$  in the polynomial expression:

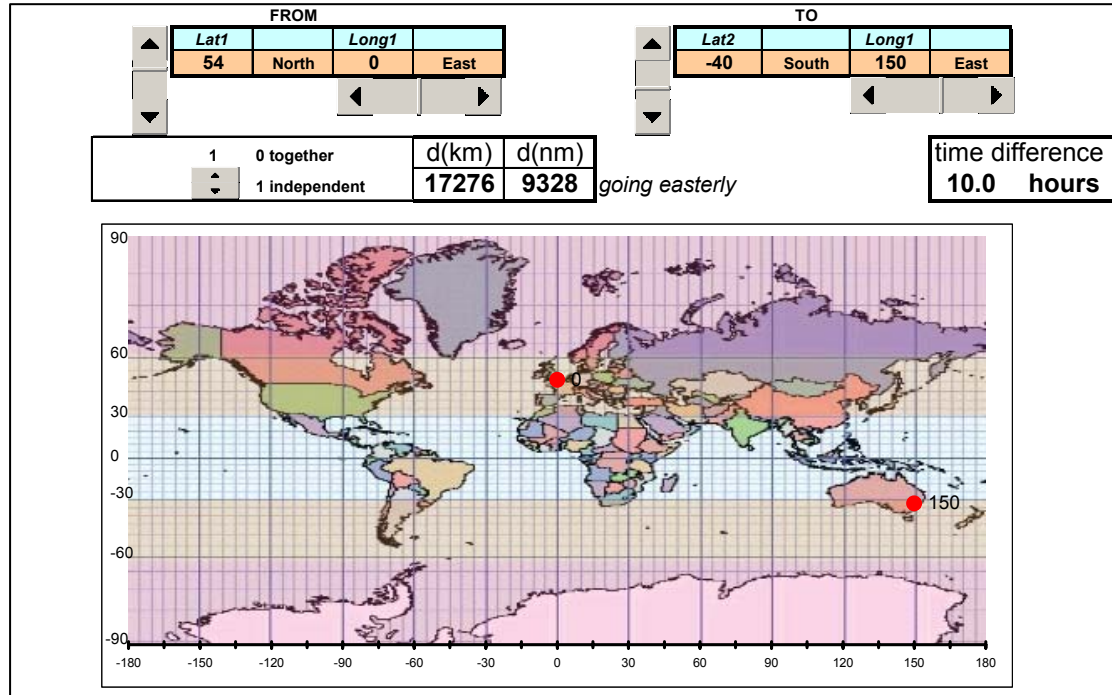
$$y = ax^5 + bx^4 + cx^3 + dx^2 + ex + f$$

The spreadsheet allows the user to select graphs of the function and its first and second derivative as well as showing a tangent to the function at a point on the curve.



## Mercator

This spreadsheet calculates the distance between two points shown on a Mercator projection of the globe. The user controls the position of the two points by altering their longitude and latitude with scrollbars. The points are shown on a graph and the great circle between them is calculated.



## Transformations

The user can control the rotation, reflection and translation of an object, as well as the shape of the object itself.

**Boot skootin'**

1	1.7
-0.9	1.5

M

**Operation Order**

1st  reflection

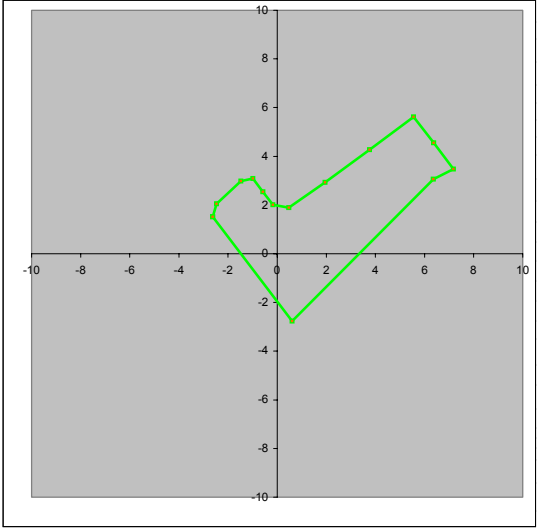
2nd  rotation

3rd  translation

**Rotation**

**Reflection** in  $y=\tan ax$     On

**Translation**



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