

## 1.4 Videos Guide

### 1.4a

- Secant lines and the tangent line

### 1.4b

Exercise:

- The point  $P(0.5, 0)$  lies on the curve  $y = \cos \pi x$ .
  - If  $Q$  is the point  $(x, \cos \pi x)$ , use your calculator to find the slope of the secant line  $PQ$  (correct to six decimal places) for the following values of  $x$ :

(i) 0	(ii) 0.4	(iii) 0.49
(iv) 0.499	(v) 1	(vi) 0.6
(vii) 0.51	(viii) 0.501	
  - Using the results of part (a), guess the value of the slope of the tangent line to the curve at  $P(0.5, 0)$ .
  - Using the slope from part (b), find an equation of the tangent line to the curve at  $P(0.5, 0)$ .
  - Sketch the curve, two of the secant lines, and the tangent line.