

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.