

1. The table shows the estimated percentage P of the population of Europe that use cell phones. (Midyear estimates are given.)

Year	1998	1999	2000	2001	2002	2003
P	28	39	55	68	77	83

- (a) Find the average rate of cell phone growth
- (i) from 2000 to 2002
 - (ii) from 2000 to 2001
 - (iii) from 1999 to 2000
- (b) Estimate the instantaneous rate of growth in 2000 by taking the average of two average rates of change.
2. Let the function $f(x)$ defined by

$$f(x) = \begin{cases} 0 & \text{if } x \leq 0 \\ 5 - x & \text{if } 0 < x < 4 \\ \frac{1}{5 - x} & \text{if } x \geq 4 \end{cases}$$

- (a) Sketch the graph of f .
 - (b) Where is f discontinuous?
 - (c) Where is f not differentiable?
3. P. 95 #4
4. P. 102 #4
5. P. 102 #6
6. P. 103 #18
7. P. 104 #28
8. P. 109 #23