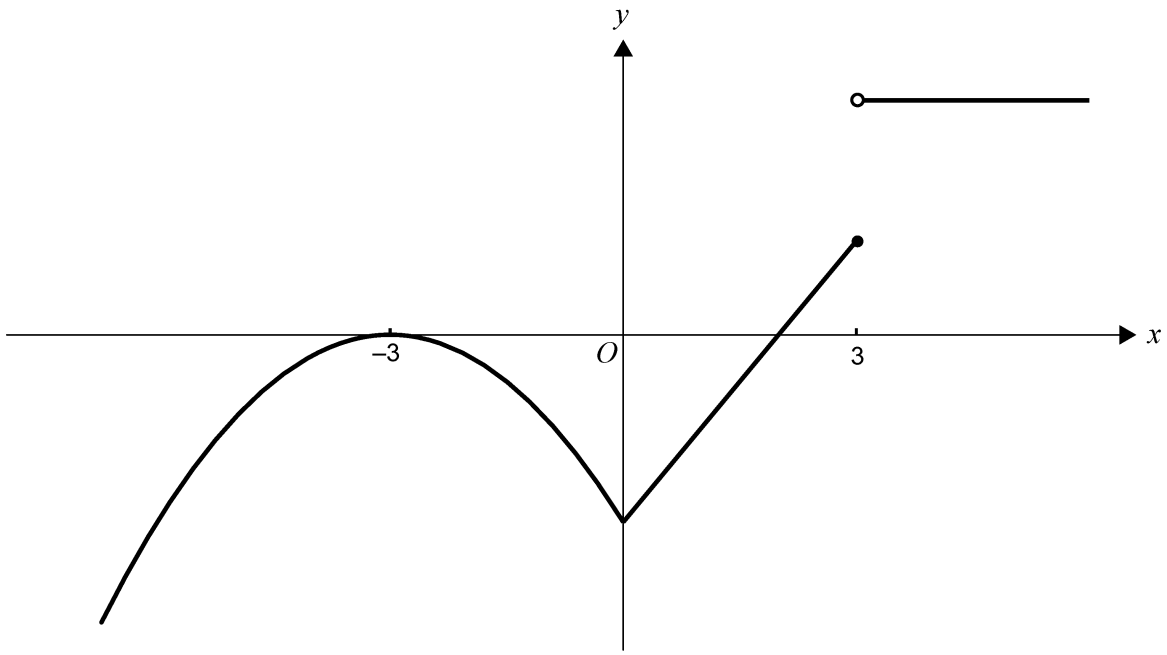
UNIT 3 & 4 MATHEMATICAL METHODS
VCAA EXAMINATION 1 – 2006 TO 2017

DIFFERENTIATION – DERIVATIVE FUNCTIONS

QUESTION 1 – 2007 (HARD – HARD)

The diagram shows the graph of a function with domain R.



a. For the graph shown above, sketch on the same set of axes the graph of the derivative function.

3 marks

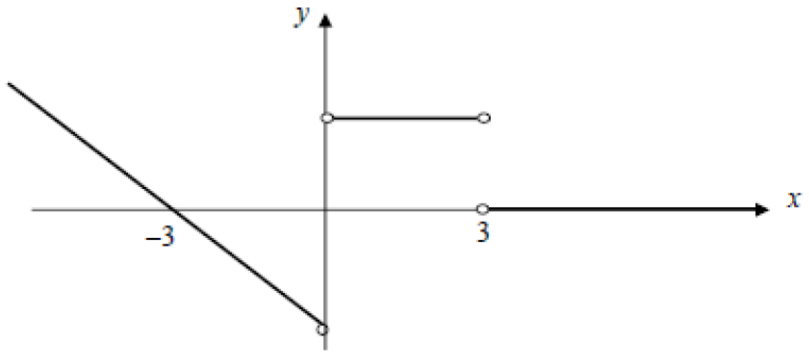
b. Write down the domain of the derivative function.

1 mark

SOLUTIONS

QUESTION 1

a.



(A3)

Difficulty: 25% of students answered this question correctly
Average Score: 1.2 out of 3

b. Derivatives not exist at endpoints, discontinuities and cusps

Domain = $(-\infty,0)\cup(0,3)\cup(3,\infty)$ or $R\setminus\{0,3\}$ **(A1)**

Difficulty: 45% of students answered this question correctly
Average Score: 0.5 out of 1