1 Reagan deposits the same amount every month and takes nothing out. After 2 months she has $\$310$; after 5 months, $\$550$; after 10 months, $\$950$.

(a) Find the rate of change, with its unit (1)

(b) Find the amount she started with (1)

(c) Write the function (1)

(d) Check your function against the 10-month figure (2)

(5 marks)

2 A gardener applies fertiliser to a lawn. The table shows the mass left after covering a given area.

Area (x m^2)	20	30	50	80
Mass (y g)	1600	1350	850	100

(a) Find the rate of change between 20 and 30 (2)

(b) Find the rate of change between 30 and 50, and between 50 and 80 (2)

(c) Is this relationship linear? Explain. (2)

(d) How much fertiliser did he start with? (1)

(7 marks)

3 A boda charges the same amount per kilometre plus a fixed starting fee. A 4 km journey costs $4{,}200$ shillings and a 9 km journey costs $7{,}700$ shillings.

(a) Find the cost per kilometre (1)

(b) Find the starting fee (1)

(c) Write the function (1)

(d) Find the cost of a 15 km journey (1)

(4 marks)

4 A candle burns at a steady rate. After 3 hours it is 24 cm tall; after 7 hours it is 12 cm tall.

(a) Find the rate of change, with its unit (1)

(b) How tall was the candle to begin with? (1)

(c) Write the function (1)

(d) After how many hours does the candle burn out? (1)

(4 marks)

5 A function is $y = 45x + 120$, where x is the number of days and y is the number of litres in a reservoir.

(a) Describe in one sentence what is happening (2)

(b) A second reservoir is described by $y = 30x + 400$. Which one is filling faster, and how can you tell from the functions alone? (2)

(c) Which one has more water at the start? (1)

(5 marks)