Always give a rate its unit. "80" is not an answer; "80 dollars per month" is.

1 For each function, write down the rate of change with its unit, and the initial value.

(a) $y = 300x + 500$, where x is minutes and y is litres (2)

(b) $y = 40x + 200$, where x is days and y is shillings (2)

(c) $y = 60x$, where x is hours and y is kilometres (2)

(6 marks)

2 For each function, write down the rate of change and say whether y is going up or down.

(a) $y = 50 - 4x$ (1)

(b) $y = 7x + 1$ (1)

(c) $y = 100 - 20x$ (1)

(d) $y = 12 + 3x$ (1)

(4 marks)

3 A car travels at a steady speed. After 2 hours it has covered 120 km. After 5 hours it has covered 300 km.

(a) How much further is that, and over how many hours? (2)

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

(c) How far had it travelled at the start? (1)

(d) Write the function (1)

(5 marks)

4 A plant is measured each week. After 2 weeks it is 14 cm tall; after 6 weeks it is 30 cm tall.

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

(b) How tall was the plant at the start? (1)

(c) Write the function (1)

(d) Use your function to find its height after 10 weeks (1)

(4 marks)

5 A tank is described by $y = 500 - 25x$, where x is minutes and y is litres.

(a) Write down the rate of change with its unit (1)

(b) Write down the initial value (1)

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

(4 marks)