Write down what each letter is worth before you start. **One mark on this sheet is for that line alone.**

1 The perimeter of a rectangle is $P = 2(l + w)$.

(a) Find P when $l = 14$ and $w = 9$ (1)

(b) Find P when $l = 20$ and $w = 5$ (1)

(c) Which operation did you do first, and why? (2)

(4 marks)

2 Average speed is $S = \dfrac{d}{t}$, where d is the distance in kilometres and t is the time in hours.

(a) Find S when $d = 120$ and $t = 2$ (1)

(b) Find S when $d = 150$ and $t = 3$ (1)

(c) Find S when $d = 90$ and $t = 1.5$ (1)

(d) A pupil got an answer of 0.025 km/h for a bus journey. Explain why that answer cannot be right. (2)

(5 marks)

3 The cost of a taxi is $C = 800d + 3000$ shillings for d kilometres.

(a) Find the fare for 6 km (1)

(b) Find the fare for 15 km (1)

(c) A pupil worked out the fare for 6 km and got $2{,}400{,}000$ shillings. Write down the calculation they must have done (2)

(4 marks)

4 The surface area of a cube of side s is $A = 6s^2$.

(a) Find A when $s = 2$ (1)

(b) Find A when $s = 5$ (1)

(c) Which do you do first, the squaring or the multiplying by 6? (2)

(d) What would you get if you did them the other way round when $s = 5$? (1)

(5 marks)

5 A rectangle has a length of 12 cm and a width of w cm. Its area is $A = 12w$ and its perimeter is $P = 2(12 + w)$.

(a) Find A and P when $w = 5$ (2)

(b) Find A and P when $w = 12$ (2)

(c) When w doubled from 5 to 10, what happened to the area? (2)

(5 marks)

6 A tailor charges $C = 3000m + 8000$ shillings for a garment using m metres of cloth. A customer paid $29{,}000$ shillings.

(a) How much of the payment was the fixed charge? (1)

(b) How much was paid for the cloth? (1)

(c) How many metres of cloth were used? (1)

(d) The formula multiplies and then adds. Write down what you did, and in what order, to work backwards. (2)

(5 marks)