Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

Each answer shows the steps, then the **result**.

2.1

- lower bound **23.5** kg
- upper bound **24.5** kg

2.2

- bounds 365 and 375
- $\mathbf{365 \leqslant d < 375}$

2.3

- lower bound **6.415** s
- upper bound **6.425** s

2.4

- smallest **4450**
- largest whole number of people **4549**

2.5

- bounds $1.75 \leqslant h < 1.85$
- **yes**: 1.84 is within the bounds and rounds to 1.8

3.1

- lower bound **9.55** s
- upper bound **9.65** s

3.2

(a)

- bounds 124.5 and 125.5
- $\mathbf{124.5 \leqslant L < 125.5}$

(b)

- **no**: 125.5 cm rounds up to 126 cm, so it is excluded

3.3

(a)

- bounds 2.35 and 2.45
- $\mathbf{2.35 \leqslant m < 2.45}$ kg

(b)

- **yes**: every possible mass is less than 2.45 kg, because the upper bound is excluded

3.4

(a)

- 2 s.f. here means the nearest 0.1: half a step 0.05
- $\mathbf{3.65 \leqslant n < 3.75}$

(b)

- **no**: 3.649 is below the lower bound 3.65 (it rounds to 3.6)