

### Bounds and Accuracy

- 1 A car travels at 50 mph (rounded to 1 significant figure) for a journey of 320 miles (rounded to 2 significant figures). Give the journey time rounded to a reasonable amount.
- 2 An aircraft flies 500 miles rounded to 1 significant figure. It takes  $3\frac{1}{2}$  hours rounded to the nearest half hour. How fast was the aircraft travelling rounded to a reasonable amount?
- 3 The height of a triangular prism is 12cm rounded to the nearest whole number. The base of the triangle is 8cm. The length of the prism is 45cm. All measurements have been rounded to the nearest whole number. Give the volume of the triangular prism to a suitable degree of accuracy.
- 4 A ship sails 10km on a bearing of  $140^\circ\text{N}$  and then a further 16km on a bearing of  $260^\circ\text{N}$ .
  - a Calculate how far the ship is from its starting point.
  - b Calculate the bearing upon which the ship should sail to return to its starting point.
  - c If the distances are given to the nearest whole number and the bearings are given to two significant figures, give the error interval for the journey home.
- 5 A hemisphere has a radius of 27.4cm to one decimal place. The hemisphere is 23kg in weight to the nearest whole number. Find the approximate density giving the answer to a suitable degree of accuracy.

- 6 A small boat has gone missing on the ocean. The search and rescue mission is being led by a Coast Guard helicopter. The shaded area of the diagram represents the search area in which you think the boat may be found.

It takes approximately one hour to search  $15\text{ km}^2$  of ocean.

How long will it take for the search and rescue mission to be completed?

All figures are given to the nearest whole number.

