8 **(a)** Show that one solution of the equation $x^3 - 5x - 8 = 0$ lies between 2 and 3.

....

....

....[1]

(b) Use trial and improvement to find this solution,
correct to one decimal place.
You must show all your trials and their outcomes.

(b) ....[3]

4

9 **(a)** Write 0·000765 in standard form.

(a) ....[1]

(b) Calculate.

$$\frac{(4\cdot5 \times 10^{-3}) \times (5\cdot8 \times 10^6)}{2\cdot7 \times 10^{-5}}$$

Give your answer in standard form, correct to 2 significant figures.

(b) ....[2]

3

[Turn over

10 **(a)** Simplify.

$$2x^2 \times x^3$$

(a) ....[1]

(b) Factorise completely.

$$2x^2 + x^3$$

(b) ....[1]

(c) Expand and simplify.

$$(x + 5)(x - 7)$$

(c) ....[2]

4

11 Susan sold her car for £9620.
This was 35% less than she paid for it.

How much did she pay for the car?

£.......................................[3]

3

12 The table shows the sales of ice cream in a shop over a period of two years.

Year	2002	2002	2002	2002	2003	2003	2003	2003
Quarter	1	2	3	4	1	2	3	4
Sales (£)	115	419	821	205	123	435	825	233

In order to show the trend, the 4-quarter moving averages are calculated.
The first three have been plotted on the grid.
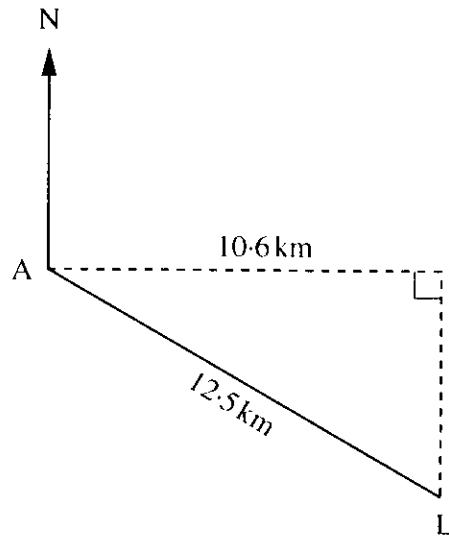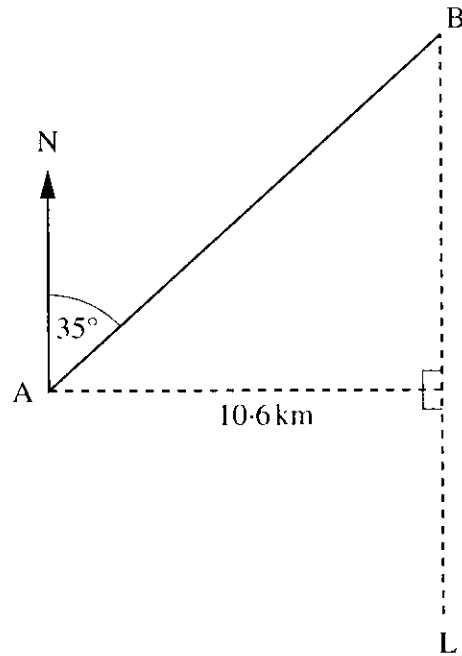
Calculate and plot the next two.

[4]

13

N

↑

10·6 km

A ⌐ ⌐ ⌐ ⌐ ⌐ ⌐ ⌐ ⌐ ⌐ ┐

Not to scale

12·5 km

L
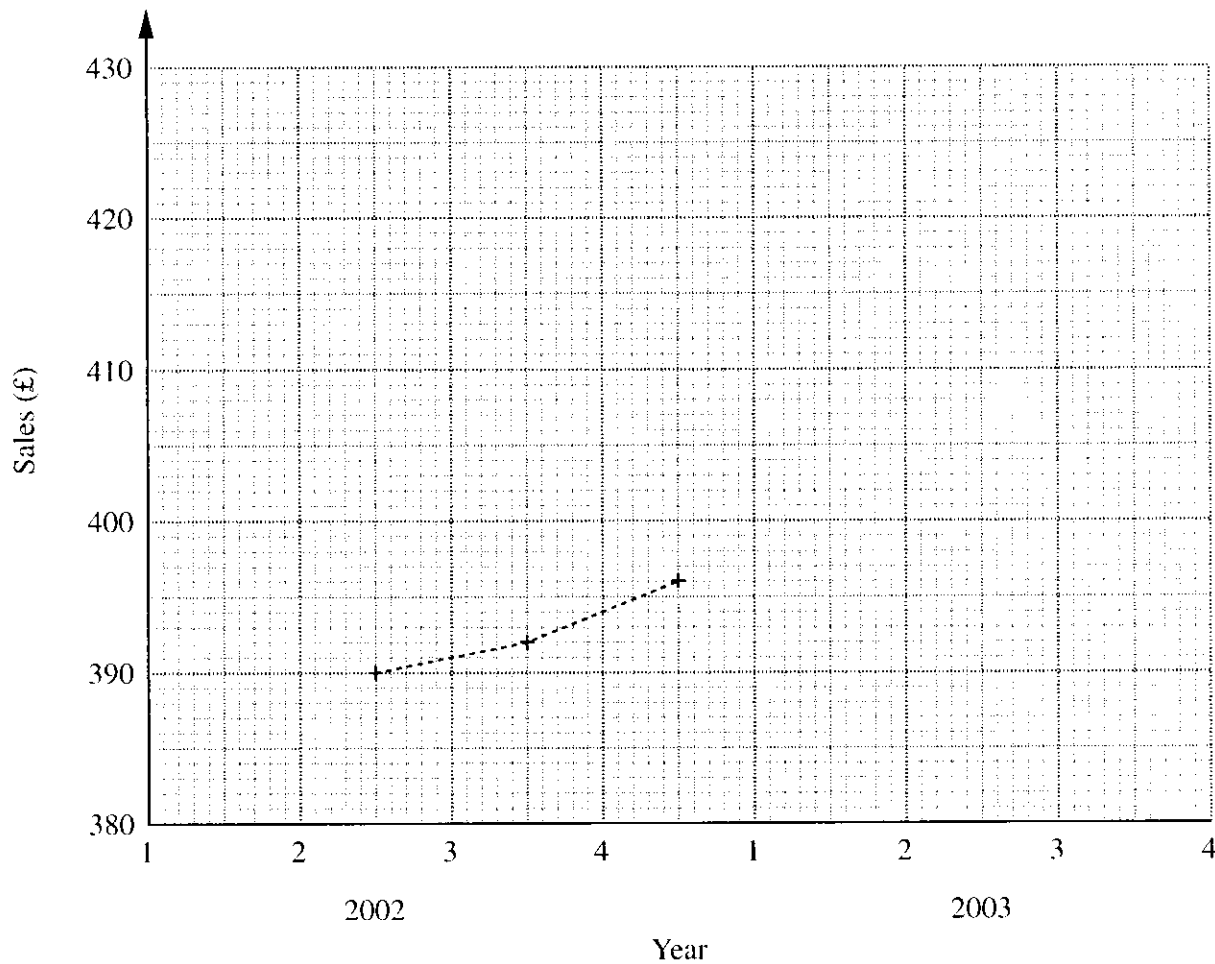
A ship at A is 12·5 km from a lighthouse (L).
A is 10·6 km West of L.

(a)   Calculate the bearing of L from A.

(a) ....° [4]

(b)

Not to scale

The ship sails from A to B, where B is due North of L.

The bearing of B from A is 035°.

Calculate the distance AB.

(b) ....km [3]

7