

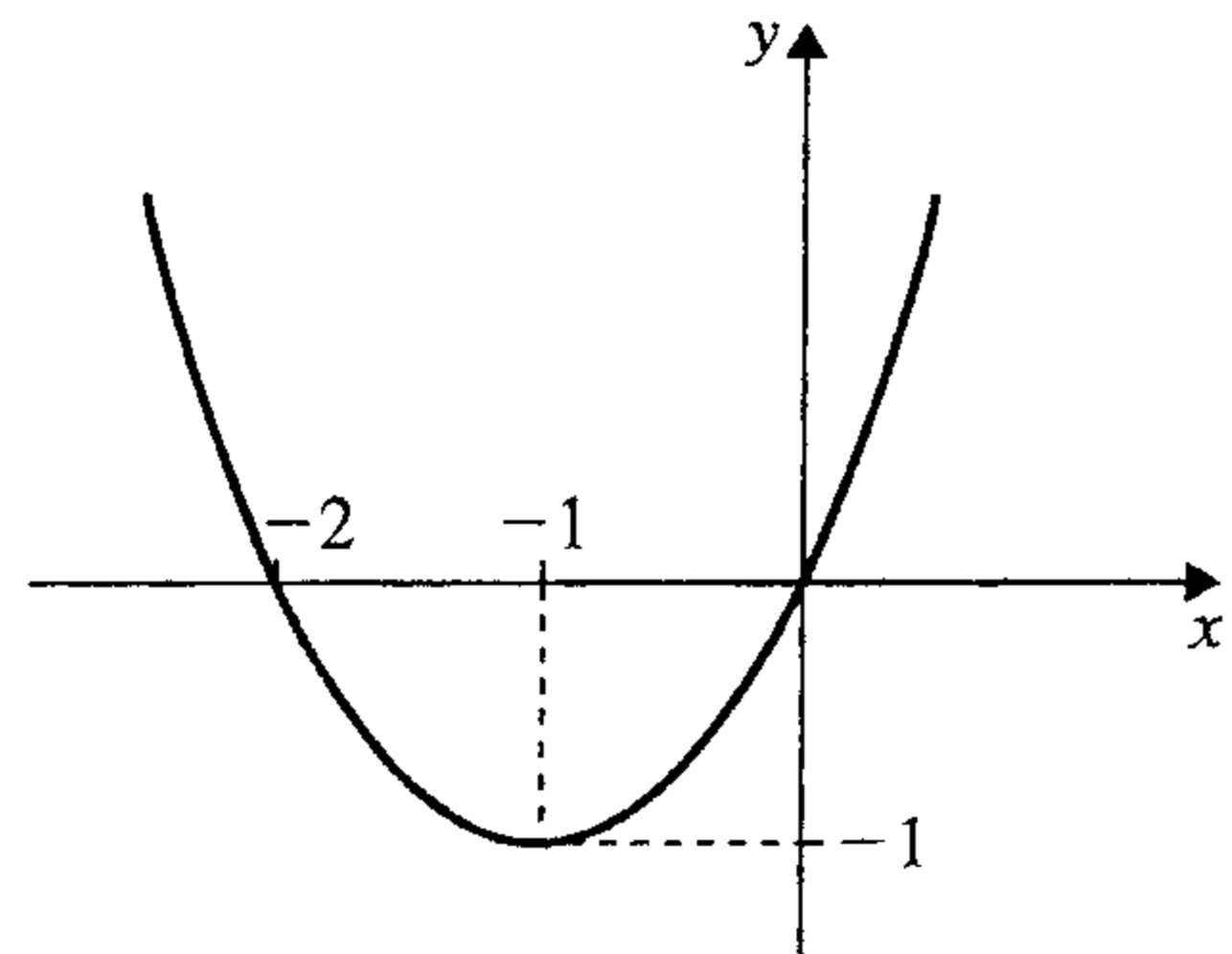
EXERCISE 1L

A computer or calculator which sketches curves can be used effectively in this exercise, although it is not essential.

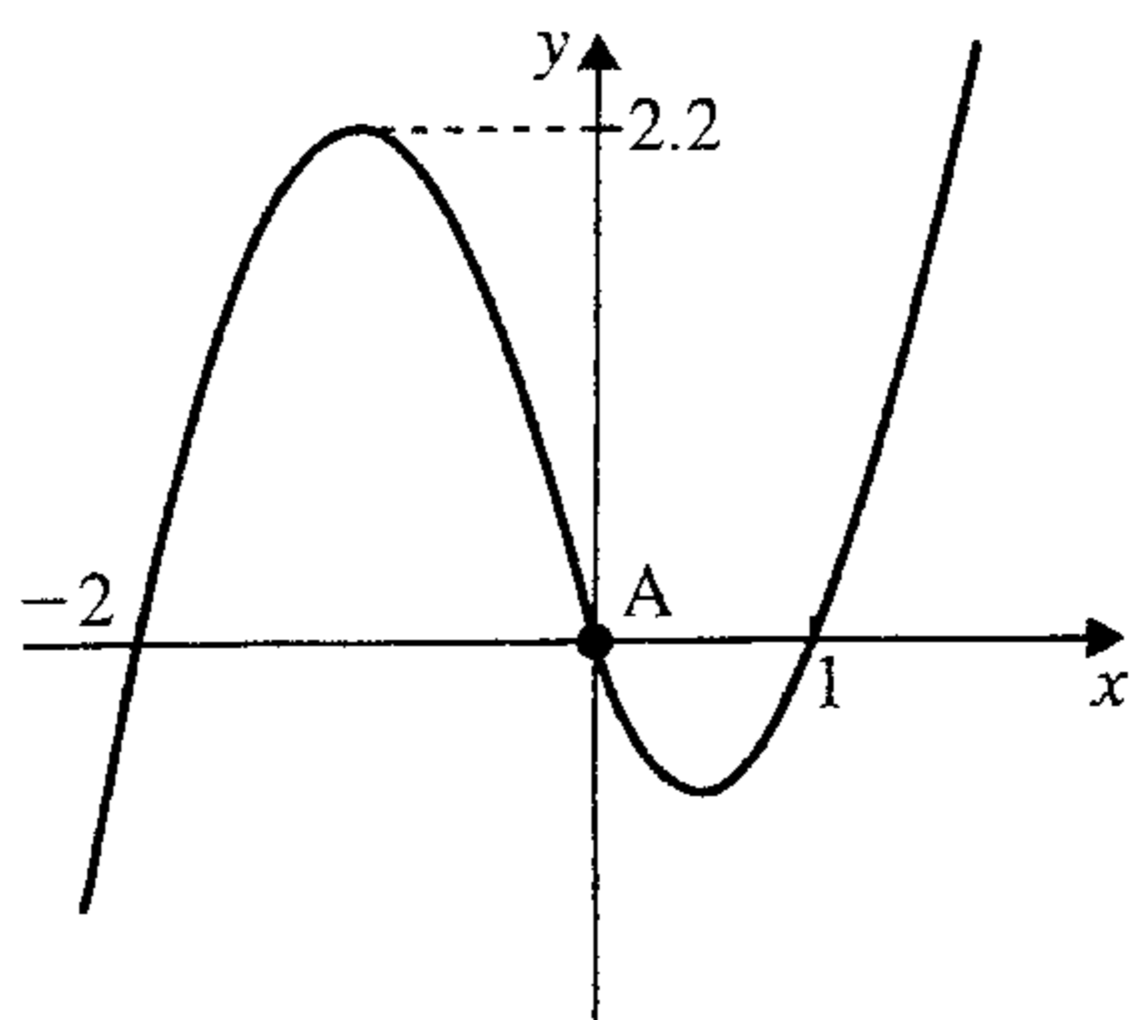
- 1 a Draw a sketch graph of $y = x^2$ for values of x from -3 to 3 .
Label the graph $y = f(x)$.
- b On the same axes draw a sketch graph of $y = x^2 + 4$ and label the graph $y = f(x) + 4$.
- c On the same axes sketch the graph of $y = (x - 1)^2$ and label the graph $y = f(x - 1)$.

2 This is the sketch graph of $y = f(x)$.

- a Sketch the graph of $y = f(x) + 3$
- b Sketch the graph of $y = f(x + 1)$
- c Sketch the graph of $y = -f(x)$.



3 This is the sketch graph of $y = f(x)$.



a Sketch $y = f(x) - 2$

b Sketch $y = f(x - 7)$

Give the new coordinates of the point A on the two sketches.

4 This is the sketch of $y = f(x)$ which passes through A, B, C.

Sketch the following curves, giving the new coordinates of A, B, C in each case.

a $y = -f(x)$

b $y = f(x - 2)$

c $y = f(2x)$

