2.2 Construct and Use Simple Formulae

Find a formula for the perimeter, P, of each of the shapes below.

(a)





(c)



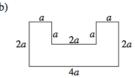


In each of the following cases, use the formula to find the value of P:

- when a = 5 cm, b = 10 cm;
- (b) when a = 5 cm;
- when a = 5 cm, b = 10 cm;
- when a = 8 cm, b = 2 cm, c = 3 cm, d = 5 cm.
- 2. Find the area, A, and perimeter length, P, for each of these shapes.

(a)









In each case, find A and P when a = 2 cm.

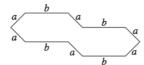
- Petrol costs 58p per litre. What is the cost, in pounds, of x litres? Use your formula to find the cost of
 - 10 litres
- (b) 50 litres
- A piece of wire is bent into the shape shown.

Find the total length of the wire used.

Simplify your answer.

(All dimensions are in centimetres.)

If the total length of the wire is 24 cm and a = 2 cm, what is the length of b?



- A train operating company calculates its fares using the formula 12p per mile. If you travel a distance x miles, what is the formula for the cost in
- (b) pounds

Use your answer to (b) to find the cost when you travel

- 100 miles (iii) 200 miles (iv) 1000 miles

6. A removals firm charges a fixed cost of £100 plus a payment of £2 for every mile travelled by its van. If the van travels x miles, write down a formula for the total cost.

Find the actual costs for journeys of

- (a) 50 miles
- (b) 100 miles
- (c) 200 miles

7. Anne used this information to work out her electricity bill.

Work out the total amount of her bill.

You must show all your working.

	Electricity Bill	
Time	Cost per unit	Units used
Day	10 p	600
Night	4 p	200

(AQA)

- 8. Afzal scored x marks in a test.
 - (a) Ben scored 3 more marks than Afzal.Write an expression for Ben's score in terms of x.
 - (b) Jason scored half of Afzal's marks.Write an expression for Jason's score in terms of x.

(AQA)

9. Sally thinks of a number. She adds 11 to the number. She then multiplies by 3. Her answer is 60.

What number did Sally first think of?

(Edexcel)

10. A function diagram produces algebraic expressions.

For example:



(a) Fill in the missing expression on a copy of this function diagram.



(b) Fill in the missing operations on a copy of this function diagram.



(AQA)