

Mixed Exercise 2

1.

- (a) The leading five cyclists in the Tour de France have weights 63 kg, 68 kg, 59 kg, 61.5 kg and 60 kg.

By how much does the mean weight of these cyclists exceed the median weight?



- (b) The heights of the leading 30 riders are shown in the table. Calculate an estimate of the mean height of the riders.

Height (cm)	Frequency
140–150	5
150–160	6
160–170	11
170–180	8

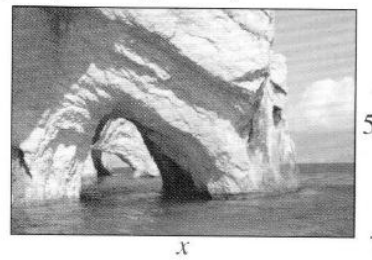
2.

(a) Remove the brackets and simplify

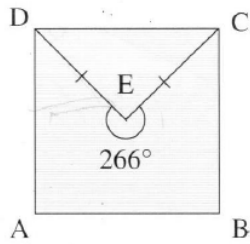
(i) $(n + 2)(n + 10)$ (ii) $(a - 1)^2$ (iii) $(x - 3)(x + 6) + (2x + 1)(x + 2)$

(b) Solve the equation $x(x + 4) = (x - 2)^2$

(c) The rectangular photo measures x cm by 5 cm.
The length of the diagonal of the rectangle is
1 cm greater than the side x . Find x .



3.



ABCD is a square. Find angle ADE.

4.

Sales of a computer were worth £26 540 000.
After a 'Help' button was fitted sales increased
by 21.2%. Find the value of the increased sales.



5.

- (a) Write down all the factors of
(i) 16 (ii) 30
- (b) Write 3080 as the product of its prime factors.

6.

The diagonal of a square is 7 cm long. Work out the area of the square.

7.

Multiply out and simplify these expressions.

(a) $2(3x - 1) - 3(x + 1)$ (b) $x(3x + 5) - 2x(x + 1)$

(c) $(x + 2)(x + 5)$ (d) $(2x + 1)^2$

8.



When Grace is in an argument, she wins 8 out of 25 disputes when she does not scream.

When she screams she wins 6 out of 20. Which is the better strategy?