

Answer **all** questions in the spaces provided.

1 Increase £145 by 18%.

.....
.....
.....
.....

Answer £ (3 marks)

2 The table shows the marks scored on a mental arithmetic test by 30 students.

Mark	Frequency
4	3
5	1
6	2
7	8
8	6
9	5
10	5

Calculate the mean mark.

.....
.....
.....
.....
.....
.....
.....

Answer (3 marks)

6

Turn over ►



3 (a) p is a prime number and r is an odd number.

Is the expression pr^2 always odd, always even or could it be either odd or even? Tick the correct box.

Always odd
 Always even
 Could be either odd or even

Give examples to justify your answer.

.....

.....

(1 mark)

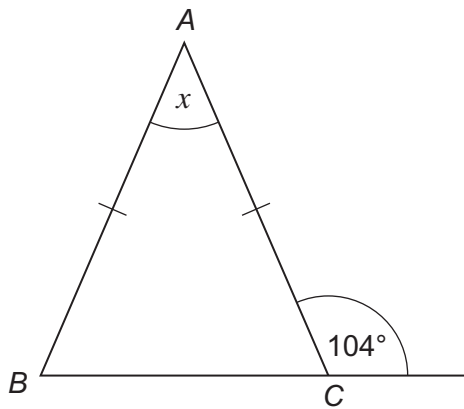
3 (b) x, y and z are all odd numbers.

Write an expression in terms of x, y and z so that the value of the expression is always even.

.....

Answer (1 mark)

4 ABC is an isosceles triangle.



Not drawn accurately

Calculate the value of the angle x .

.....

.....

.....

.....

Answerdegrees (3 marks)



5 (a) Factorise $x^2 + 7x$

.....

Answer (1 mark)

5 (b) Expand $5(3x + 8)$

.....

Answer (1 mark)

5 (c) Expand and simplify $3(2x + 1) - 2(x - 3)$

.....

.....

.....

Answer (2 marks)

6 Here are some values used to convert between metric units and imperial units.

1.6

1.75

2.2

4.5

30

Fill in the appropriate value to make these sentences true.

One kilogram is approximately pounds.

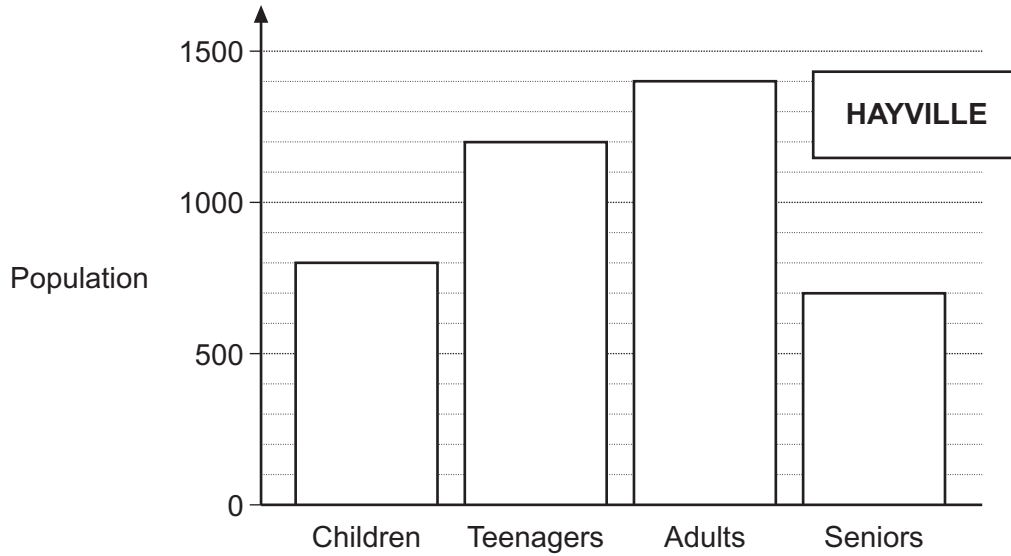
One foot is approximately centimetres.

One litre is approximately pints.

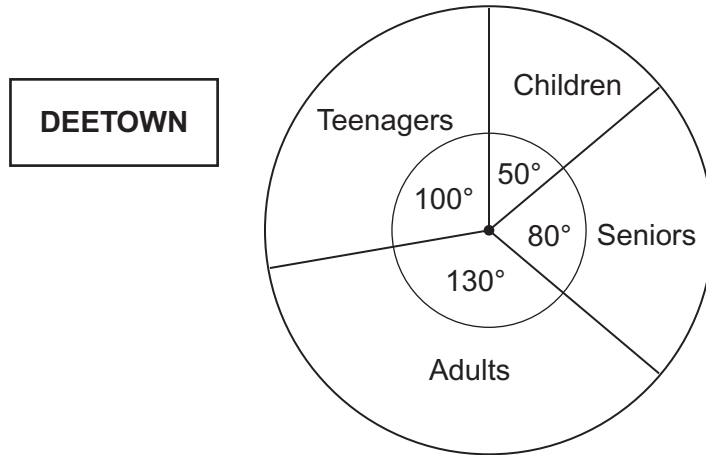
(2 marks)



7 The bar chart shows a breakdown of the population of Hayville.



The pie chart shows the proportions of the same groups in Deetown.



There are twice as many people in Deetown as Hayville.

Work out the number of people in Deetown who are Adults.

Give your answer to an appropriate degree of accuracy.

.....

.....

.....

.....

.....

.....

Answer (5 marks)



8 (a) Solve the equation $\frac{6}{x} = 12$

.....
.....

Answer $x =$ (1 mark)

8 (b) Solve the equation $3y + 8 = 3 - 2y$

.....
.....
.....

Answer $y =$ (3 marks)

9 (a) The n th term of a sequence is $n^2 + 1$

Write down the first three terms.

.....
.....

Answer 1st term

2nd term.....

3rd term (2 marks)

9 (b) Write down the n th term of the sequence

5 11 17 23 29 35

.....
.....

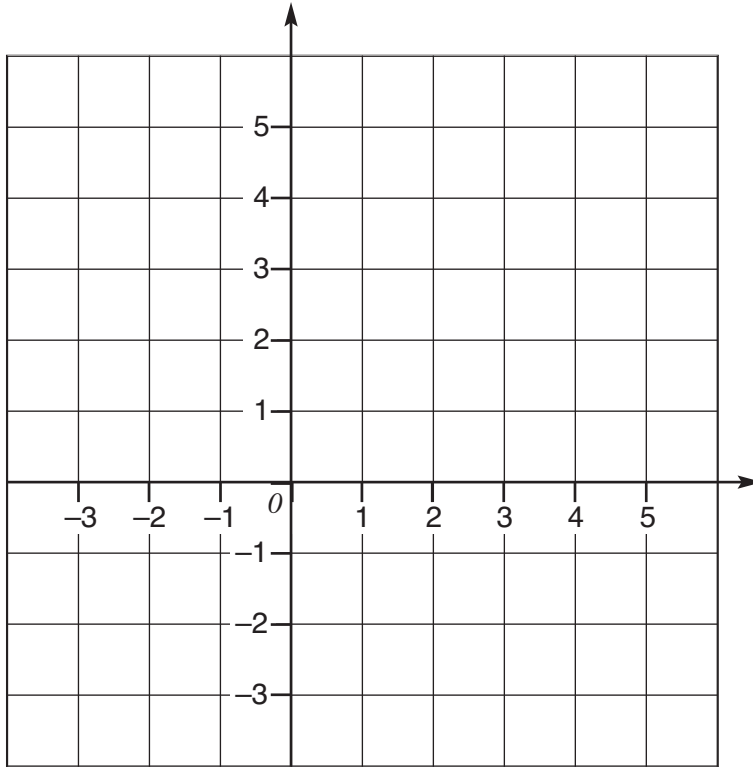
Answer (2 marks)



10 Work out the area enclosed by the lines

$y = 3$ $x = -2$ $y = x$

Use the grid to help you.



.....

.....

.....

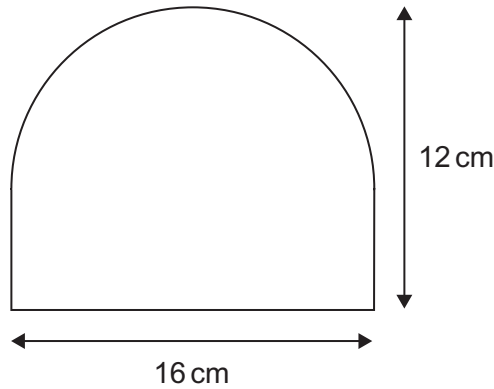
.....

.....

Answersquare units (4 marks)



11 This shape is made from a rectangle and a semicircle.



Not drawn accurately

Calculate the area of the shape.

.....

.....

.....

.....

.....

.....

Answercm² (4 marks)

12 (a) Show clearly that $(x - 2)(x - 3) \equiv x^2 - 5x + 6$

.....

.....

(1 mark)

12 (b) Show that when $x = 2$ the value of $x^2 - 5x + 6$ is zero.

.....

.....

.....

(1 mark)

12 (c) Write down another value of x for which $x^2 - 5x + 6$ is zero.

Answer (1 mark)

