Forming & Solving Equations (H & F)

A collection of 9-1 Maths GCSE Sample and Specimen questions from AQA, OCR, Pearson-Edexcel and WJEC Eduqas.

Name:	
Total Marks:	

1. The diagram shows a square.

   All the lengths are measured in centimetres.

   Diagram not drawn to scale

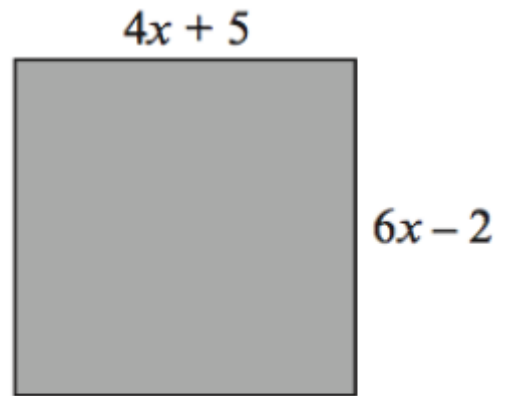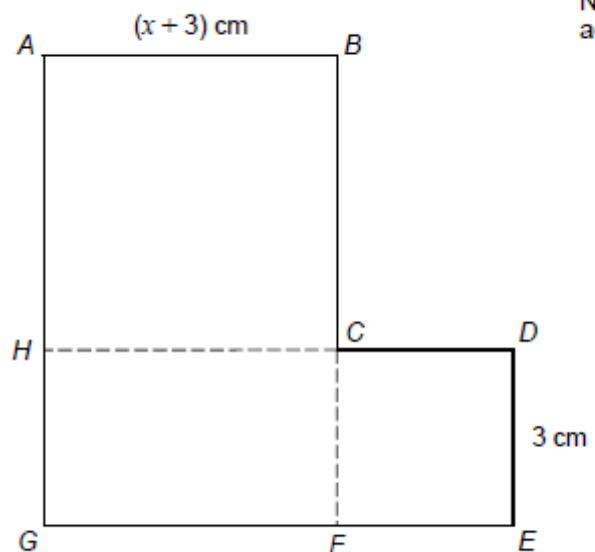   Use an algebraic method to find the length of one side of the square.

   $4x + 5$

   $6x - 2$
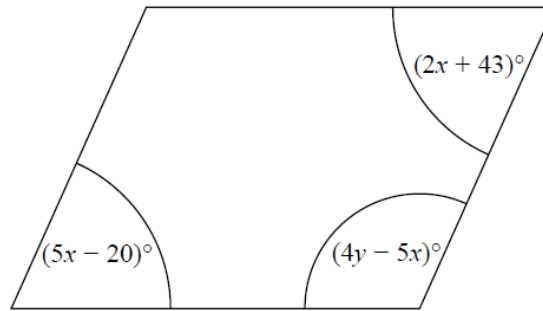
   Diagram not drawn to scale

   [5]

2. ABCH is a square.

   HCFG is a rectangle.

   CDEF is a square.

   They are joined to make an L-shape.

   Show that the total area of the L-shape, in cm², is $x^2 + 9x + 27$

   Not drawn accurately

   A $(x + 3)$ cm B

   H C D

   3 cm

   G F E

   [4]

3. Here is a parallelogram.

Work out the value of x and the value of y.

x = ...

y = ...

[5]

4. Kieran, Jermaine and Chris play football.

• Kieran has scored 8 more goals than Chris.

• Jermaine has scored 5 more goals than Kieran.

• Altogether they have scored 72 goals.
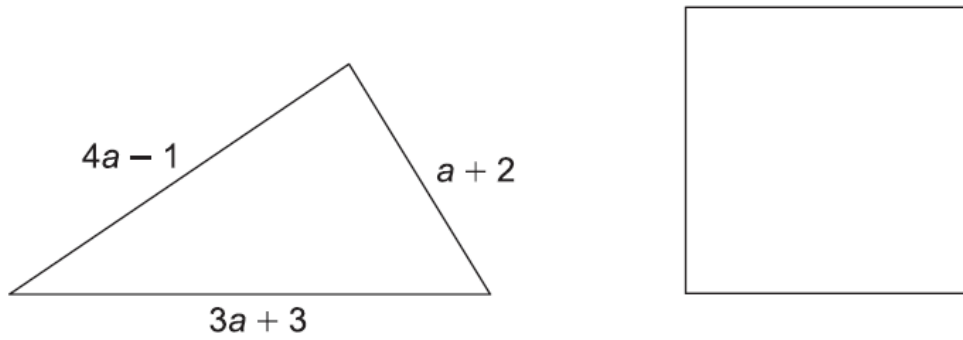
How many goals did they each score?

Kieran ....

Jermaine ....

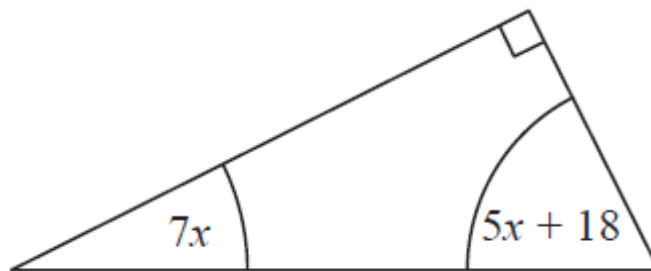Chris ....

[5]

5. The perimeter of the triangle is the same length as the perimeter of the square.

Find an expression for the length of one side of the square in terms of a.

Give your answer in its simplest form.

.... [4]

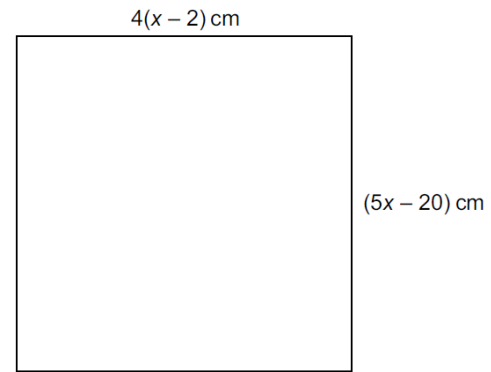6. The diagram shows a right-angled triangle.

All the angles are in degrees.

Work out the size of the smallest angle of the triangle.

[3]

7. This is a square.
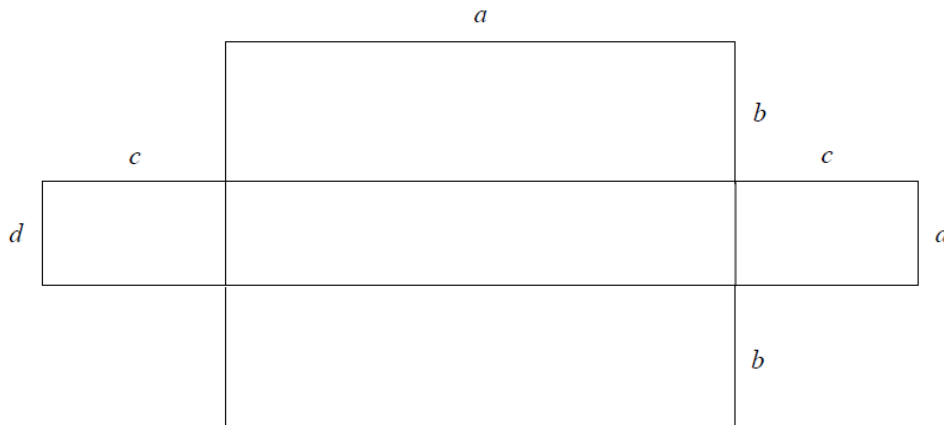
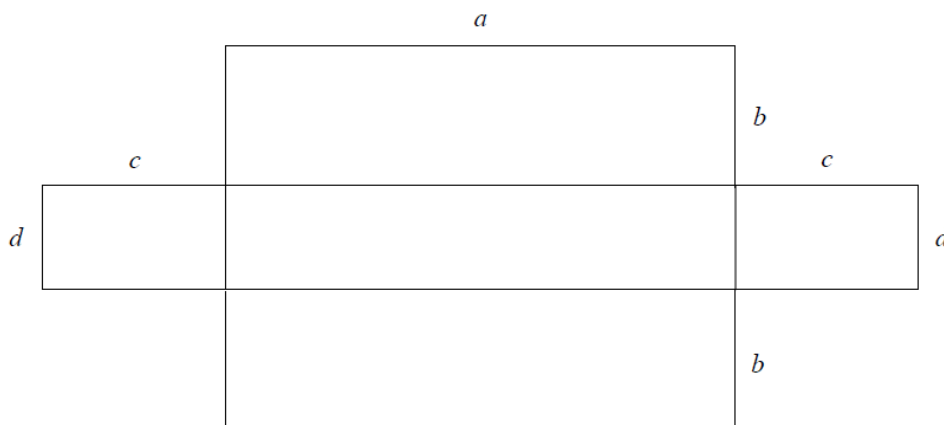   Work out the length of the side of the square.

4(x – 2) cm   **Not to scale**

(5x – 20) cm

.... cm [5]

8. A shape is made from rectangles.

a) On the diagram below shade an area represented by the expression ad + cd

a

b

c c
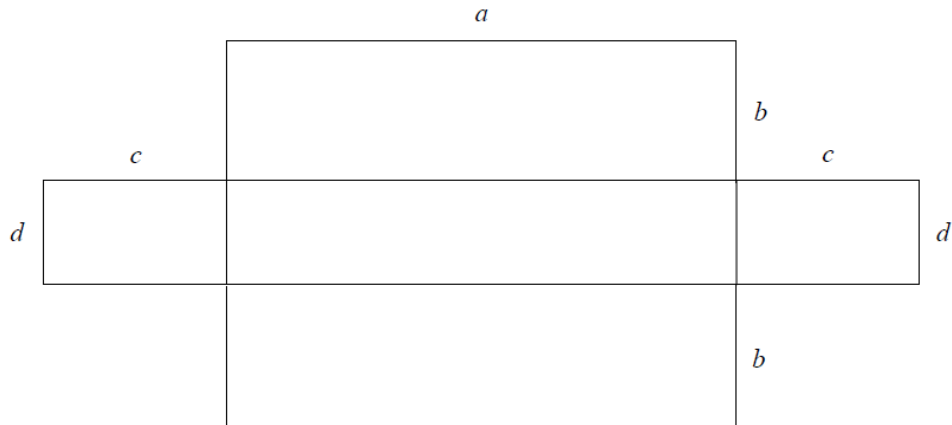
d d

b

[1]

b) On the diagram below shade the area represented by the expression d(a + 2c)

a

b

c c

d d

b

[1]

c) Write down an expression for the area of the whole shape.

[1]

9 The diagram shows a square.

(7*x* – 3) cm

3(*x* + 1) cm
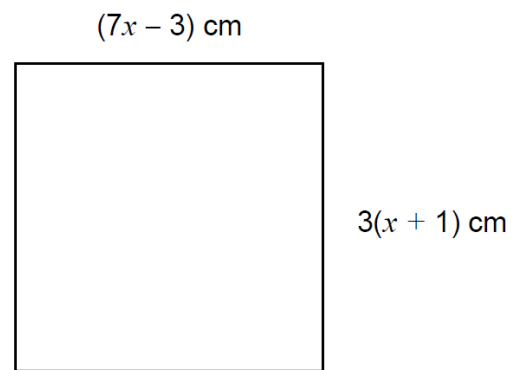
Work out the length of one side of the square.

[4]

CREDITS AND NOTES

Question	Awarding Body	Question	Awarding Body
1	WJEC Eduqas	13	
2	AQA	14	
3	Pearson Edexcel	15	
4	OCR	16	
5	OCR	17	
6	Pearson Edexcel	18	
7	OCR	19	
8	AQA	20	
9	AQA	21	

Notes:

These questions have been retyped from the original sample/specimen assessment materials and whilst every effort has been made to ensure there are no errors, any that do appear are mine and not the exam board s (similarly any errors I have corrected from the originals are also my corrections and not theirs!).

Please also note that the layout in terms of fonts, answer lines and space given to each question does not reflect the actual papers to save space.

These questions have been collated by me as the basis for a GCSE working party set up by the GLOW maths hub - if you want to get involved please get in touch. The objective is to provide support to fellow teachers and to give you a flavour of how different topics "could" be examined. They should not be used to form a decision as to which board to use. There is no guarantee that a topic will or won't appear in the "live" papers from a specific exam board or that examination of a topic will be as shown in these questions.

Links:

AQA http://www.aqa.org.uk/subjects/mathematics/gcse/mathematics-8300

OCR http://ocr.org.uk/gcsemaths

Pearson Edexcel http://qualifications.pearson.com/en/qualifications/edexcel-gcses/mathematics-2015.html

WJEC Eduqas http://www.eduqas.co.uk/qualifications/mathematics/gcse/

Contents:

This version contains questions from:

AQA – Sample Assessment Material, Practice set 1 and Practice set 2

OCR – Sample Assessment Material and Practice set 1

Pearson Edexcel – Sample Assessment Material, Specimen set 1 and Specimen set 2

WJEC Eduqas – Sample Assessment Material