WJEC CBAC

GCSE

4352/01

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A14-4352-01

MATHEMATICS (UNITISED SCHEME)
UNIT 2: Non-Calculator Mathematics
FOUNDATION TIER

A.M. FRIDAY, 7 November 2014

1 hour 15 minutes

CALCULATORS ARE
NOT TO BE USED
FOR THIS PAPER

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1.	10	
2.	4	
3.	6	
4.	3	
5.	3	
6.	5	
7.	4	
8.	4	
9.	3	
10.	4	
11.	2	
12.	5	
13.	3	
14.	4	
15.	5	
Total	65	

ADDITIONAL MATERIALS

A ruler, a protractor and a pair of compasses may be required.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

Write your name, centre number and candidate number in the spaces at the top of this page.

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

Take π as 3·14.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

Scale drawing solutions will not be acceptable where you are asked to calculate.

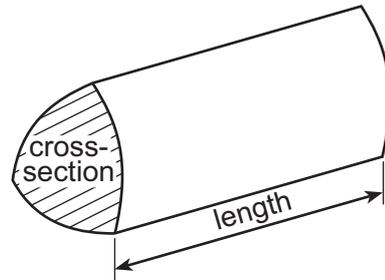The number of marks is given in brackets at the end of each question or part-question.

You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question **6**.

Formula List

Area of trapezium $= \frac{1}{2}(a + b)h$
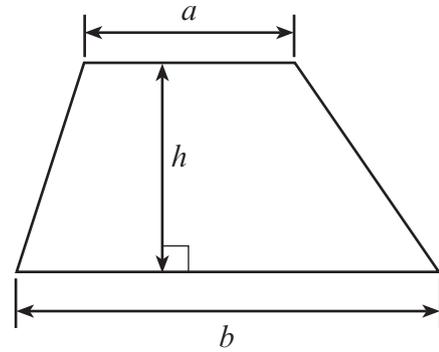
Volume of prism = area of cross-section × length

1. *(a)* (i) The population of Cardiff is about 346 100.
Write this number in words. [1]

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(ii) The population of Wrexham is forty two thousand, six hundred and four.
Write this number in figures. [1]

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(b) Find the sum of 687 and 435. [1]

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(c) Sion buys a box of 10 eggs which costs £3.20.
What is the cost of one egg, in pence? [1]

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(d) Find the difference between 68 and 125. [1]

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(e) Write down all the factors of 15. [2]

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(f) Write down the multiple of 8 that lies between 50 and 60. [1]

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(g) **Showing all your working**, find an **estimate** for the value of $6 \times 21 \cdot 8$. [2]

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2. *(a)*

C

A

B

D
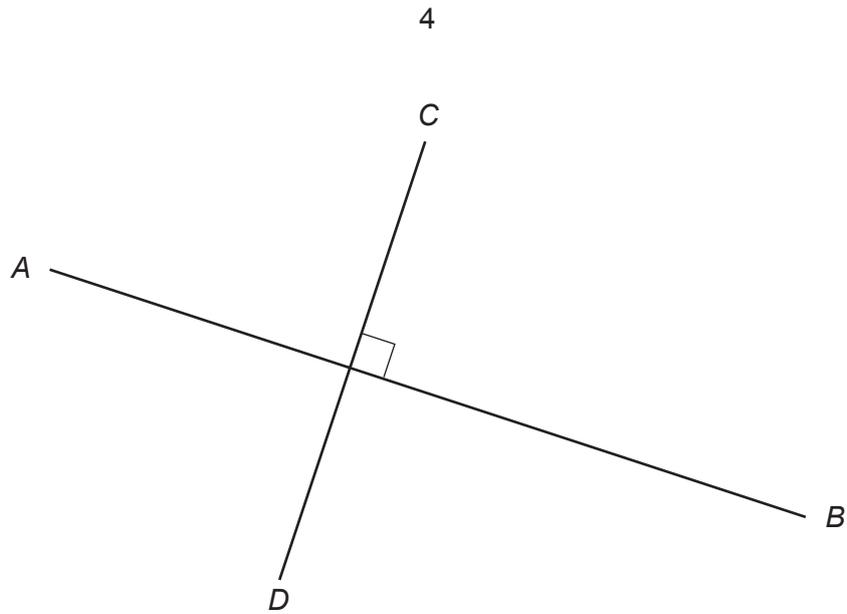
Fill in the space below with only **one** word to make this statement true. [1]

AB is .... to *CD*

(b) Each of these circles has its centre marked with •.

(i) Draw a diameter of this circle. [1]
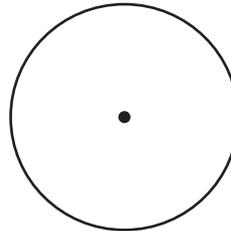
(ii) Draw a tangent to this circle. [1]
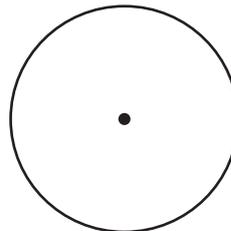
(c) Draw **one** straight line on the shape below so that the completed shape has rotational symmetry of order 2. [1]
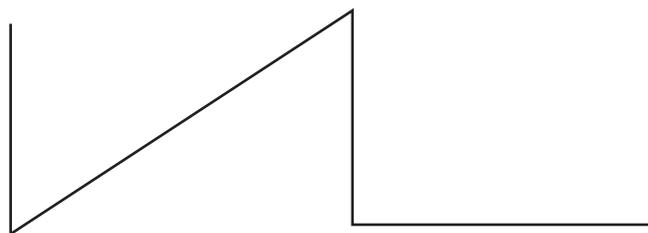
3. *(a)* Write down the next number in this sequence. [1]

6, 14, 22, 30, ...

....

(b) Here is a number machine.

| INPUT | → | ADD 2 | → | MULTIPLY BY 3 | → | OUTPUT |
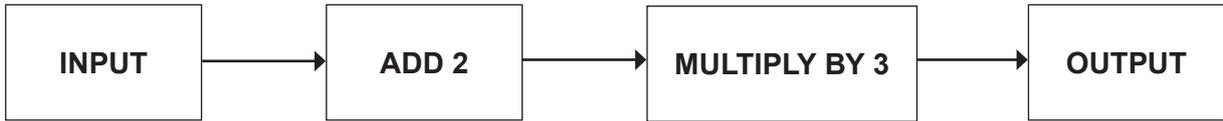
Write down the **OUTPUT** when the **INPUT** is – 7. [1]

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(c) Solve these equations.

(i) $x - 9 = 24$ [1]

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(ii) $\frac{x}{5} = 20$ [1]

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(iii) $4x + 7 = 43$ [2]

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4. *(a)* Tegwyn has 20 books on a shelf.

15 of the books are written in Welsh and 5 are written in English.

Tegwyn chooses one book at random.

Circle the best expression from those given below to describe the chance of Tegwyn choosing a book written in Welsh. [1]

impossible   unlikely   an even chance   likely   certain

(b) Jan buys 10 raffle tickets at a fair. Altogether, 127 raffle tickets are sold.

First prize is awarded for the first ticket drawn in the raffle.

What is the probability that Jan will win first prize? [1]

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(c)
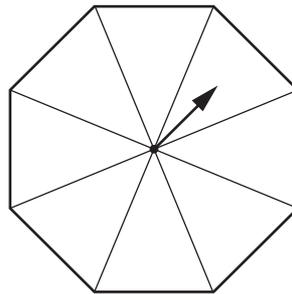
Sven is making a spinner from this regular octagon.
He writes even numbers on some of the triangles and odd numbers on the remaining triangles.

The probability of getting an even number is $\frac{3}{4}$.

Shade a set of triangles that Sven could use for the even numbers. [1]

5. A packet of nuts weighs 200 g.
It costs £3.50.
What is the cost of 1 kg of these nuts? [3]

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6. *You will be assessed on the quality of your written communication in this question.*

Emma is cooking a ready-prepared meal which must be served at 7:30 p.m.

The instructions for each step are given in this table.

Pasta Bake

Oven cook: Temperature 180°C

Instructions
Heat for 35 minutes in oven.
Remove from oven and stir.
Heat for a further 15 minutes.
Remove from oven and leave to
stand for 2 minutes before serving.

Emma has already heated the oven to the correct temperature.

Write a timetable to show the time to start each step so that Emma is ready to serve the meal at 7:30 p.m. [5]

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7. Mrs Jones bought some pencils, biros, rulers and rubbers for her children, according to this table.

	Number of pencils	Number of biros	Number of rulers	Number of rubbers	Total cost
Denny	3	0	0	0	£1.20
Kenny	2	4	0	0	£3.20
Penny	2	3	2	0	£4.20
Lenny	1	0	1	1	£1.45

Find the cost of each item and fill in the table below. [4]

	Pencil	Biro	Ruler	Rubber
Cost of 1 item				

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8. Mair is playing a game with two sets of cards.
She has one set of **three red** cards and one set of **three blue** cards.
In each set, one card has the number 3 on it, one card has the number 5 on it and one card has the number 7 on it.
Mair picks one red card and one blue card at random.
To get her score, she multiplies the two numbers on the cards together.
Find the probability that Mair's score lies between 16 and 36. [4]

9. *ABC* is an isosceles triangle with *AB = AC*.

BCD is a straight line and *AĈD* = 136°.

Calculate the size of angle x. [3]
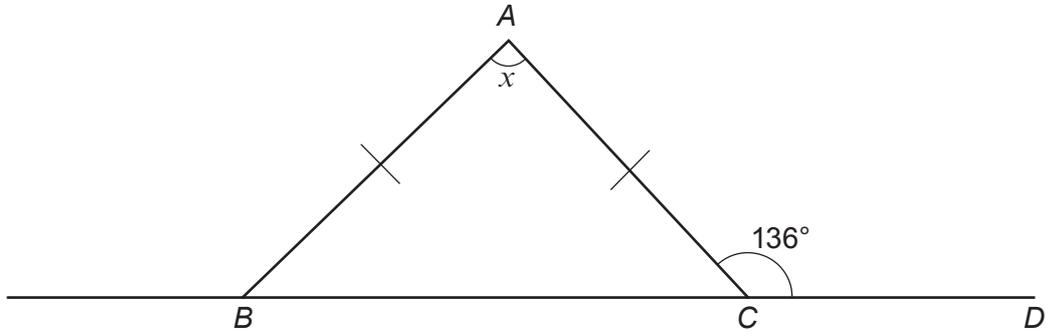
Diagram not drawn to scale

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x = ... °

10. Tom bought $2\frac{1}{2}$ kg of bananas and some oranges.

The bananas cost £1.20 per kilogram and the oranges cost 30p each.

Tom paid £5.10 altogether.

How many oranges did he buy? [4]

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11. Reflect the given triangle in the line $y = 3$.   [2]

12.

Sadie wants to join a fitness club for one year.
Two types of membership are available.

Basic Membership	**Elite Membership**
£32 per month	£60 per month
Special offer: Pay for 10 months in a single payment and get membership for a whole year	Special offer: 10% off when you pay for a whole year in a single payment
Exercise class: £4 per class	All classes included

Sadie wants to take part in two exercise classes per week for the 52 weeks of the year.

Sadie decides to pay for a whole year's membership in a single payment.
Which type of membership is cheaper?
By how much is it cheaper?
You must show **all** your working. [5]

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13.

DOG FOOD

$\frac{1}{2}$ kg tin for £1.70

1 kg tin for £3.30

2 kg tin for £5.20

Alun is looking after 6 large dogs for one day.

They each need $\frac{3}{4}$ kg of tinned dog food every day.

Alun needs to buy food for them and wants to spend as little as possible.

How much will he need to spend on dog food for the day?

You must show **all** your working. [3]

14. *(a)* Write down an expression for the nth term of the following sequence. [2]

5, 12, 19, 26, 33, ...

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nth term ....

(b) Simplify $5x^2 \times 4x^3$. [2]

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15. A children's game uses a circular spinner, which is coloured black and white.
A diagram of the spinner is shown below.

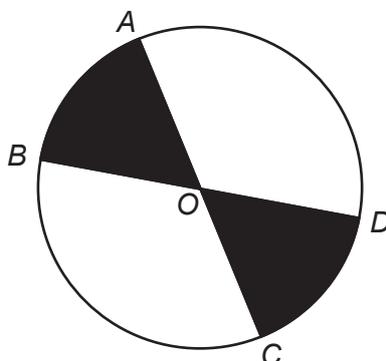*Diagram not drawn to scale*

AC and *BD* are diameters of the circle. $A\hat{O}B$ = 54°.

(a) Find the probability that the spinner lands on a **black** sector. [2]

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(b) The spinner is spun 720 times. How many times would you expect the spinner to land on a **white** sector. [3]

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END OF PAPER

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