

Pre Public Examination
November 2016
GCSE Mathematics (AQA style)

Foundation Tier
Paper 2F

Name

Class

TIME ALLOWED

1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

- Answer **all** the questions.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- You are permitted to use a calculator in this paper.
- You may use the π button on your calculator or you may take the value of π to be 3.142.
- Do all rough work in this book.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question on the Question Paper.
- **You are reminded of the need for clear presentation in your answers.**
- The total number of marks for this paper is **80**

© The PiXL Club Limited 2016

This resource is strictly for the use of member schools for as long as they remain members of The PiXL Club. It may not be copied, sold nor transferred to a third party or used by the school after membership ceases. Until such time it may be freely used within the member school. All opinions and contributions are those of the authors. The contents of this resource are not connected with nor endorsed by any other company, organisation or institution.

Question	Mark	out of
1		3
2		1
3		3
4		2
5		1
6		1
7		2
8		2
9		3
10		3
11		1
12		3
13		3
14		3
15		8
16		3
17		4
18		5
19		1
20		3
21		4
22		3
23		3
24		3
25		2
26		3
27		3
28		4
Total		80

There are no questions printed on this page

**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**

Answer **all** questions in the spaces provided

1 (a) Write forty six thousand, three hundred and fifty two as a number.

[1 mark]

Answer_____

1 (b) In the number 203 406.45, what is the value of the digit 3?

[1 mark]

Answer_____

1 (c) In the number 203 406.45, what is the value of the digit 5?

[1 mark]

Answer_____

2 What is $\frac{3}{8}$ when written as a decimal?

[1 mark]

Answer _____

3 Here is part of a sequence;

3, 5, x , 9, 11

3 (a) Find the missing number, marked x , in the sequence.

[1 mark]

Answer _____

3 (b) Sam says all numbers in this sequence are odd.

Is Sam correct?

Tick a box.

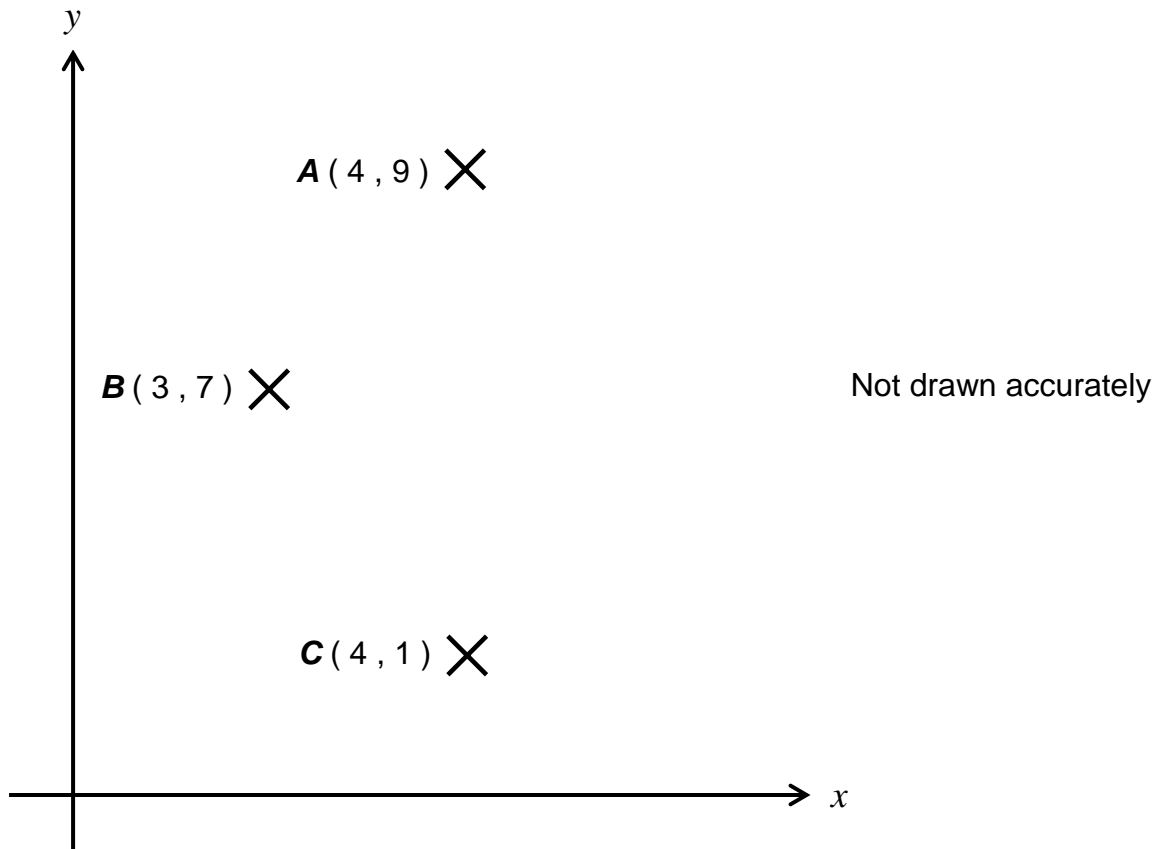
Explain your answer.

Sam is correct

Sam is incorrect

[2 marks]

4 $ABCD$ is a kite.



Find the co-ordinates of point D .

[2 marks]

Answer (_____ , _____)

5 Which of the following ratios are **not** equivalent to $3 : 5$?

Circle your answer.

You may circle more than one.

6 : 10

15 : 9

30 : 50

25 : 15

[1 mark]

- 6 Here is part of the timetable for trains running between Stockport and Greenbank.
Some trains do not stop at Navigation Road.

Stockport	2033	2110	2233	2327
Navigation Road	-	2129	-	2344
Knutsford	2059	2144	2259	2359
Greenbank	2115	2200	2315	0015

- 6 (a) The journey from Knutsford to Greenbank always takes the same length of time.

How long is this?

[1 mark]

Answer _____

- 7 Millie thinks of a number. When she multiplies it by 3 and adds 5, her answer is 23.

What number was Millie thinking of?

Show all of your working.

[2 marks]

Answer _____

8 A biased spinner is labelled *A*, *B*, *C* and *D*. The probability that the spinner will land on each side is shown in this table.

Letter	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Probability	0.3	0.4		0.1

8 (a) Complete the table to show the probability that the spinner lands on the letter *C* **[1 mark]**

Answer _____

8 (b) Two girls are playing a game using the spinner.
At the start of the game, each girl chooses two letters.

To win a point, when it is that player's turn, the spinner must land on one of the two letters the player has chosen.

The girls want to choose a combination of letters that makes the game fair.
How can they do this?

Tick a box.

One player chooses *A* and *B*, the other player chooses *C* and *D*.

One player chooses *A* and *C*, the other player chooses *B* and *D*.

One player chooses *A* and *D*, the other player chooses *B* and *C*.

None of these combinations would be fair.

[1 mark]

9 x satisfies the inequality

$$3 \leq x < 7.$$

9 (a) Write down all the integer values that x can take.

[1 mark]

Answer _____

9 (b) Represent this on a number line.

[2 marks]



10 Patricia sells flowers for Valentine's Day, either as single flowers or in bunches of 12 flowers.

She sells a single flower for £1.

She sells a bunch of flowers for £10.

John buys a total of 50 flowers for £44.

How many single flowers and bunches of flowers did he buy?

[3 marks]

Single flowers _____

Bunches of flowers _____

11 Which of these numbers is closest to 1?

Circle your answer.

0.9

0.89

1.05

1.1

[1 mark]

12 Amelie is x years old.

12 (a) Ben is twice as old as Amelie.
Write an expression for Ben's age.

[1 mark]

Answer _____

12 (b) Sam is 3 years older than Ben.
Write an expression for Sam's age.

[1 mark]

Answer _____

12 (c) James is half Sam's age.
Write an expression for James's age.

[1 mark]

Answer _____

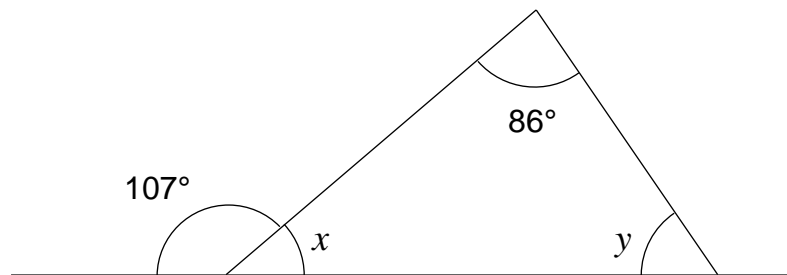
- 13 A teacher asked the pupils in his form what their favourite subject was. He recorded the results in a table.

Subject	Frequency	Angle
English	5	
French	6	
Geography	3	
History	2	
Mathematics	7	
Music	6	
Religious Studies	1	
Totals		

Complete the table to show the angle that would represent the number of students who chose each subject in a pie chart.

[3 marks]

14 This diagram is not drawn to scale



14 (a) Find the size of the angle marked x .

[1 mark]

Answer _____ $^\circ$

14 (b) Find the size of the angle marked y .

[1 mark]

Answer _____ $^\circ$

14 (c) Explain why $y + 86^\circ$ must always equal 107°

[1 mark]

15 In a class of 32 students 15 are predicted to get a grade 5.

15 (a) Katie says that this more than 48%.
Show that Katie is wrong.

[2 marks]

15 (b) In another class there are 28 students.
Almost 36% of these students obtain a grade 5.

How many students obtain a grade 5?

[2 marks]

Answer _____

15 (c) The two classes are combined.
Find the fraction of students from both classes that obtain a grade 5.

Give your answer in its simplest form.

[2 marks]

Answer _____

15 (d) What is the ratio of the number of students that obtain a grade 5 to the number of students that don't obtain grade 5.

Give your answer in its simplest form.

[2 marks]

Answer _____

16 Supasava supermarket is selling a value pack of 20 cans of Kola for £6.40

Pricewise supermarket is selling a promotional pack of 6 cans of Kola costing £2.04

Which is better value for money?

Tick a box.

Show all of your working.



Supasava

Pricewise

[3 marks]

17 The table gives information about the costs of posting parcels.

Maximum weight of a parcel	Cost
2 kg	£4.27
4 kg	£7.10
6 kg	£9.20
8 kg	£11.14
10 kg	£12.64
20 kg	£14.67

Petra has to post the following parcels:

- 2 parcels that weigh 4 kg each;
- 1 parcel that weighs 8 kg;
- 1 parcel that weighs 5 kg;
- 1 parcel that weighs 1.3 kg.

Petra has £40 to spend on posting the parcels.
Can she post all of the parcels?

Tick a box.

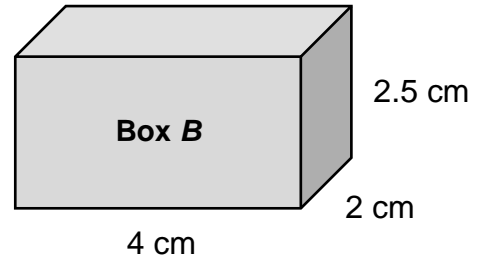
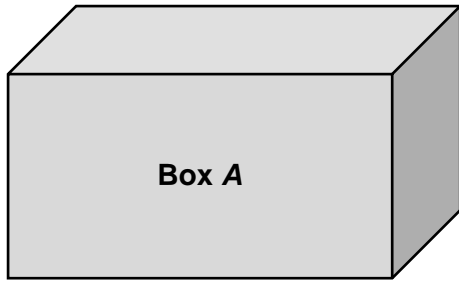
Show all of your working.

Yes she can

No she can't

[4 marks]

18



Box A is an enlargement, by a scale factor 2, of box B.

18 (a) Calculate the volume of box A.

[3 marks]

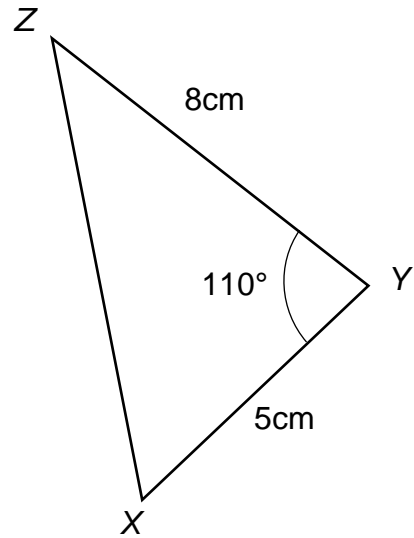
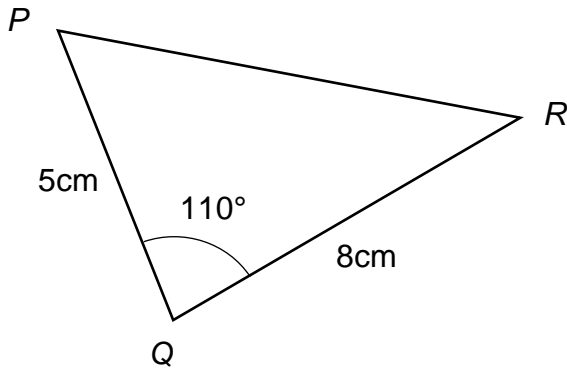
Answer _____

18 (b) Find the ratio of the volume of box B to the volume of box A.
Give your answer in its simplest terms.

[2 marks]

Answer _____

19 Triangles PQR and XYZ are congruent.



Which of these abbreviations indicates the reason you know they are congruent?

Circle your answer.

AAA

ASA

RHS

SAS

[1 mark]

20 The price of a Super Sofa is £425.

I can pay the full price in cash.

Alternatively, I can pay a deposit of 20% of the price, followed by 12 monthly repayments, each of £29.

How much extra would it cost me to pay for the Super Sofa with a deposit and 12 repayments?

[3 marks]

Answer £ _____

- 21 A survey was taken to find the most popular method of transport amongst people travelling to work. The results are given in the table.

	Walk	Cycle	Car	Total
Men		2		28
Women	9		8	
Total	30			50

- 21 (a) Fill in all the values missing from the table.

[2 marks]

- 21 (b) What is the ratio of men to women who cycle to work?

Give your answer in its simplest form.

[1 mark]

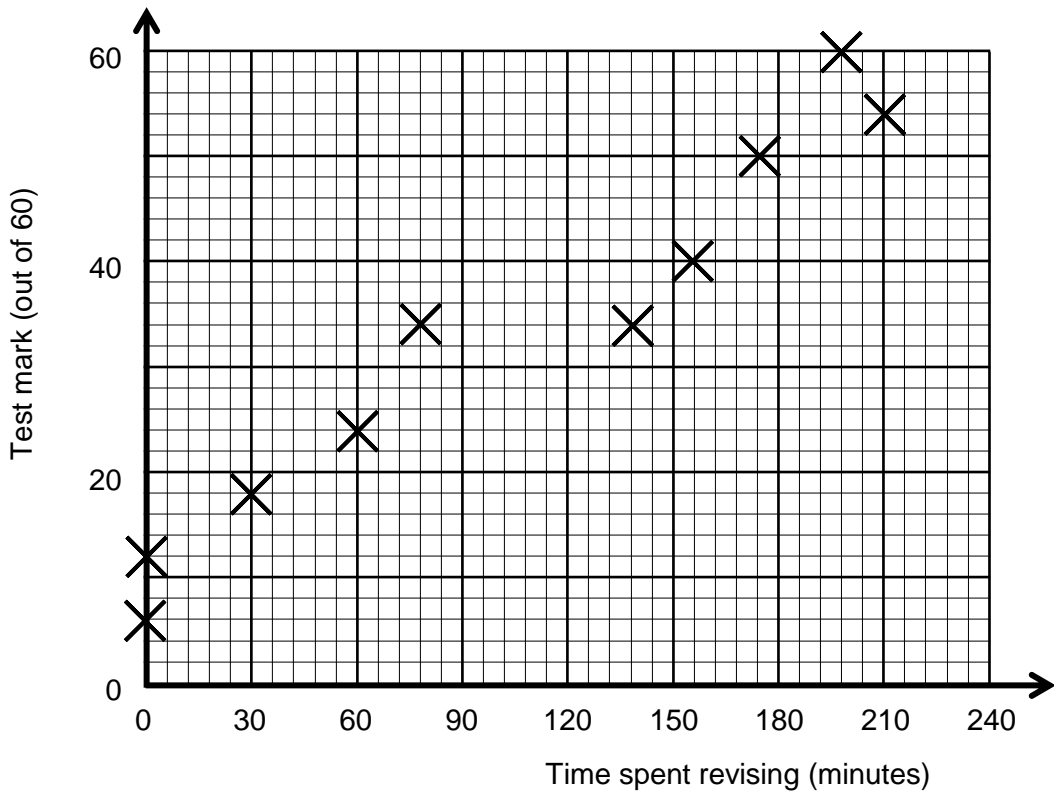
Answer _____

- 21 (c) What percentage of people who walk to work are women?

[1 mark]

Answer _____

22 A tutor asked ten pupils how long they had spent preparing for a test. He used a scatter diagram to compare their answers with the marks they obtained on the test.



22 (a) The scatter diagram shows a positive correlation.

Describe the relationship between the amount of time spent revising and the mark a student obtained in the test.

[1 mark]

22 (b) Use the scatter diagram to estimate the score that the tutor would expect if a pupil studied for two hours.

[2 marks]

Answer _____

23 Mrs Holloway needs to fill up her car with petrol.
Her car's fuel tank can hold 50 litres. There are already 12 litres of fuel in her tank.
Fuel costs 107.9p per litre.
Mrs Holloway gets 2 loyalty points for every full pound she spends on fuel.

How many loyalty points does Mrs Holloway get once she has filled up her tank?

Show all your working.

[3 marks]

Answer _____

24 Put correct terms in the spaces below to make some mathematical statements:

24 (a) Data that you collect yourself is referred to as _____ data.

24 (b) Data that is available from an existing source is known as _____ data.

24 (c) A data collection from every member of a population is called a _____.

24 (d) Data that must take a given value is known as _____ data.

_____ data can take any value and is without restriction.

[3 marks]

25 Evaluate

$$\frac{\sqrt{12.3^2 - 5.9^2}}{3.275}$$

Write down all the digits shown on your calculator display

[1 mark]

Answer _____

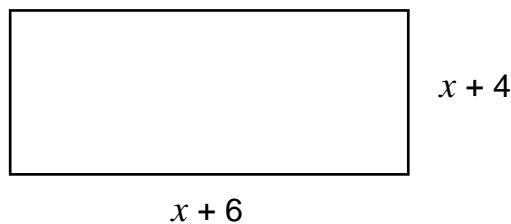
25 (b) Round your answer to part (a) to 3 significant figures

[1 mark]

Answer _____

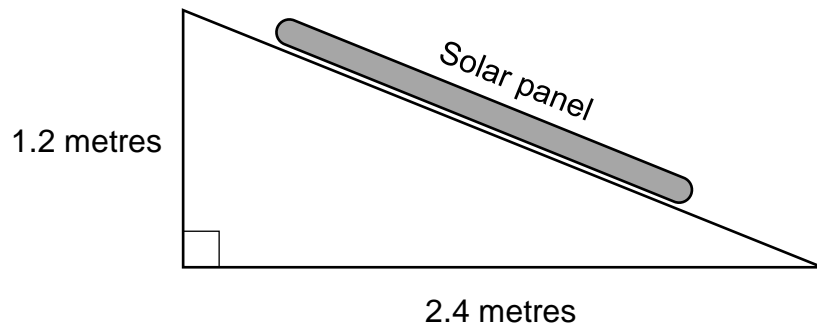
26 The diagram shows a rectangle.

Find the area of the rectangle, giving your answer in terms of x , with three terms.



[3 marks]

Answer _____



The diagram shows a solar panel mounted on a sloping roof.

Solar panels work best when mounted at an angle of between 25° and 35° to the horizontal. Is this roof suitable for the solar panel?

Tick a box.

Show all of your working.

Yes it is

No it isn't

[3 marks]

28 Greg invests his £3000 savings for five years. During that time it attracts compound interest of 1.25% each year.

Calculate the value of his account at the end of the five year period.

Show all of your working.

[4 marks]

Answer £ _____

There are no questions printed on this page

**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**

There are no questions printed on this page

**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**