Pearson Edexcel
Level 1/Level 2 GCSE (9 - 1)

Centre Number

Candidate Number

Mathematics
Paper 2 (Calculator)

Foundation Tier

Mock Set 1 – Autumn 2016
Time: 1 hour 30 minutes

Paper Reference
1MA1/2F

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out**.

Information

- The total mark for this paper is 80
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1   Work out 1.7^3

$1.7^3 = 1.7 \times 1.7 \times 1.7 = 4.913$

....

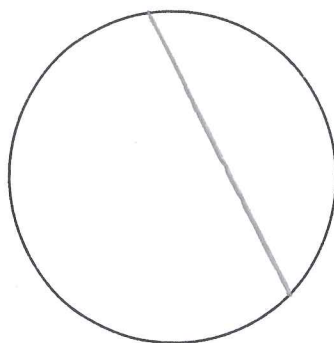**(Total for Question 1 is 1 mark)**

2   There are only red sweets and yellow sweets in a bag.
    $\frac{2}{5}$ of the sweets are red.

    Write down the ratio of red sweets to yellow sweets.

$2:3$

....
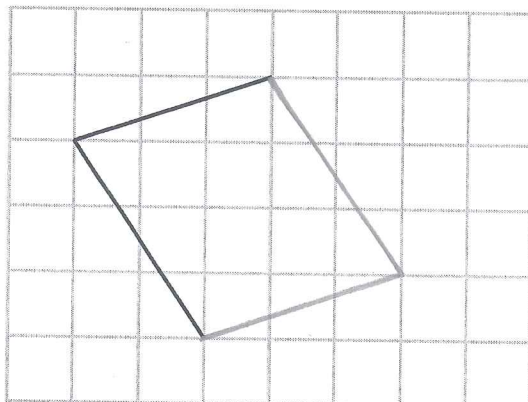
(Total for Question 2 is 1 mark)

3   Draw a chord of this circle.

(Total for Question 3 is 1 mark)

4 On the grid, complete the diagram of a parallelogram.

(Total for Question 4 is 1 mark)

5 A bowl contains

      1 apple
      1 banana
      1 orange
and 1 peach

Jess takes 2 pieces of fruit from the bowl.

Write down all the possible combinations of fruit that Jess can take.

AB, AO, AP

BO, BP,

OP

(Total for Question 5 is 2 marks)

S 5 2 6 2 5 A 0 3 2 4

6 The first term of a sequence of numbers is 18
The term-to-term rule for this sequence is "add 6"

(a) Is 603 a term of the sequence?
You must explain your answer.

No, 18 is a multiple of 6, so every term must be a multiple of 6, 603 is not (odd number)

(1)

(b) Rizvi says,

"No terms of the sequence are multiples of 7"
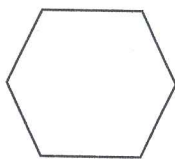
Give an example to show Rizvi is wrong.

$6 \times 7 = 42$

(1)

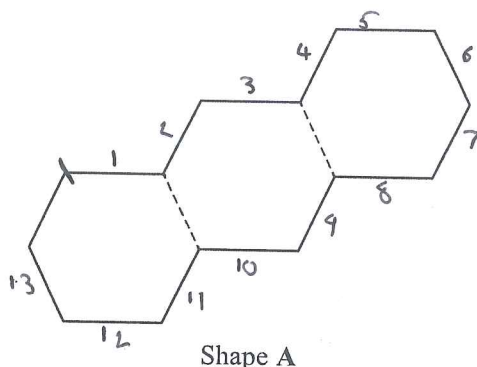**(Total for Question 6 is 2 marks)**
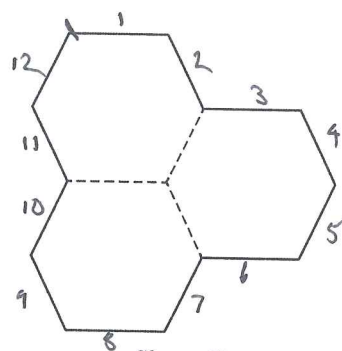
7 Here is a regular hexagon.

There are six identical hexagons.
Three of the hexagons are joined to make shape **A**.
The other three hexagons are joined to make shape **B**.

Shape **A**

Shape **B**

Which shape has the greater perimeter, shape **A** or shape **B**?
You must show how you get your answer.

Method 1 : Counting   Shpe A : 13   Shape B : 12
    Shpe A is greater.

Method 2 : Joins   Shape A : 2 joins   ShapeB:3 joins
    Shape A has 4 sides used in joins, shpe B. 6.
    Shape A has greater perimeter

(Total for Question 7 is 2 marks)

Turn over

8 A road map has a scale of $1:50\,000$
The length of a road on the map is 8.5 cm.

Work out the length of the real road in kilometres.

$1:50,000$ cm

1 cm $: 500$ m

1 cm $: 0.5$ km

$8.5 \times 0.5 = 4.25$ km

or $\dfrac{8.5 \times 50\,000}{100\,000} = 4.25$

.... km

(Total for Question 8 is 3 marks)

9

146°   32°

A   B   C
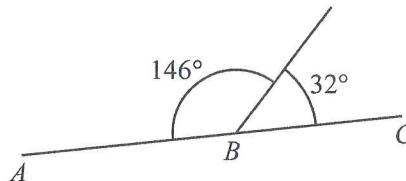
Tom says,

"*ABC* **cannot** be a straight line."

Explain why Tom is correct.

Angles on a straight line sum to 180°. Since 146 + 32 = 178°, it cannot be a straight line

(Total for Question 9 is 2 marks)

10 Uzma is planning a party for 120 children.
She is going to give every child a toy.

A pack of 8 toys costs £4.35

Work out how much Uzma will have to pay for the toys.

$120 \div 8 \times 4.35 = £65.25$

£..
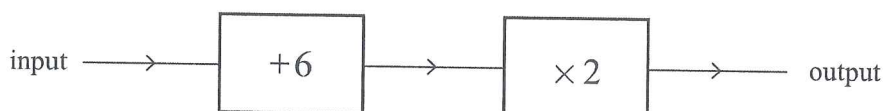
(Total for Question 10 is 3 marks)

11 Daisy thinks of a whole number.
    She multiplies the number by 3
    Daisy's answer is 34

    (a) Explain how you know Daisy's answer is wrong.

    34 is not a whole number multiple of 3

    (1)

    Here is a number machine.

    input ⟶ [+6] ⟶ [×2] ⟶ output

    18-6
    =12 ← − 6 ←   ÷ 2 ←   36

    Abbie says that when the output is 36 the input is 60

    $\frac{36}{2} = 18$

    Here is her working.

    $$36 - 6 = 30$$
    $$30 \times 2 = 60$$

    Abbie is wrong.

    (b) Explain what she has done wrong.

    The order is not correct and the inverse of ×2
    is divide by 2. The answer is 12

    (2)

    (Total for Question 11 is 3 marks)

12 Work out the value of $\dfrac{\sqrt{2.7} + 6.5}{4.8 - 1.06}$

Give your answer correct to 2 decimal places.

$= 2.127317559$

2.18

(Total for Question 12 is 3 marks)

13 Drinks and snacks can be bought in a cinema.

Drinks	
coffee	£1.50
cola	£1.25
orange	95p

Snacks	
popcorn	£1.75
nachos	£1.15
ice cream	£1.60
chocolate	85p

Special Offer

Buy one drink and two different snacks for £3.99

Laura is going to buy one drink and two different snacks.

Work out the most money that Laura can save by using the Special Offer.

Choose the highest priced menu items

coffee + popcorn + icecream   1.5 + 1.75 + 1.6 = £4.85

Worth   4.85
Cost   3.99 −
Saving   .86

86p

(Total for Question 13 is 3 marks)

S 5 2 6 2 5 A 0 8 2 4

14 $\frac{3}{8}$ of the people at a football match are men.

27% of the people at the match are women.
The rest of the people at the match are children.

Work out what percentage of the people at the match are children.

$$\frac{3}{8} + 0.27 = 0.645$$

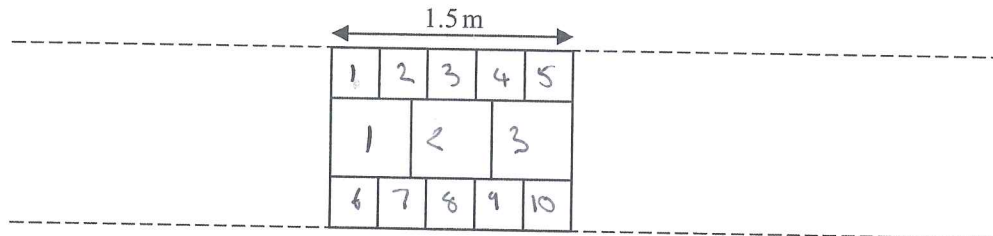$$1 - 0.645 = 0.355$$

$$= 35.5\%$$

....%

(Total for Question 14 is 3 marks)

15 Jake is going to make a path from small paving stones and large paving stones.
The diagram shows Jake's design for the path.
The rest of the path is made using the same pattern of paving stones.

A small paving stone costs £2.30
A large paving stone costs £3.65

Jake needs to buy enough paving stones to make a path that is 6 metres long.

(a) How much will Jake have to pay for the paving stones he needs?

$6 \div 1.5 = 4$

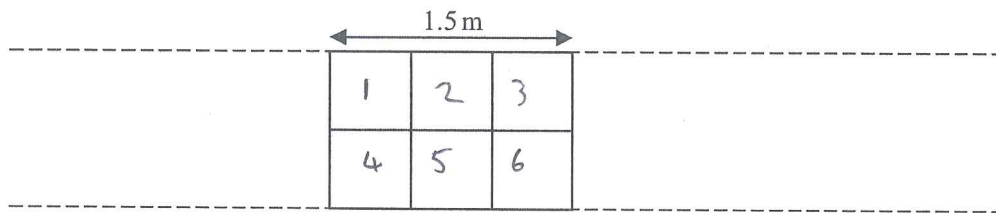Small $4 \times 10 = 40$ slabs
         $40 \times 2.3 = £92$

Large $4 \times 3 = 12$ slabs
         $12 \times 3.65 = £43.8$

Total $92 + 43.8 = £135.80$

£...

(4)

S 5 2 6 2 5 A 0 1 0 2 4

Harry designs a different path that is also 6 metres long using the large paving stones.

1.5 m

1	2	3
4	5	6

Harry says that the cost of his path will be less than half of the cost of the path that Jake designed.

(b) Is Harry correct?
You must show how you get your answer.

$4 \times 6 \times 3.65 = 87.6$

Jake : $135.8 \div 2 = 67.9$

Since $87.6 > 67.9$ Harry is incorrect

(2)

(Total for Question 15 is 6 marks)

S 5 2 6 2 5 A 0 1 1 2 4