**4MA1/PP5F**

**Time: 2 hours**

**Practice paper 5F**

**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.
* Without sufficient working, correct answers may be awarded no marks.
* Answer the questions in the spaces provided
*– there may be more space than you need.*
* **Calculators may be used.**
* You must **NOT** write anything on the formulae page.

 Anything you write on the formulae page will gain NO credit.

**Information**

* The total mark for this paper is 100.
* 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.
* Check your answers if you have time at the end.

**Answer ALL TWENTY TWO questions.**

**Write your answers in the spaces provided.**

**You must write down all the stages in your working.**

**1** Jan recorded the number of steps she took each day last week.

This information is shown in the table.

|  |  |
| --- | --- |
| **Day** | **Number of steps** |
| Monday | 9780 |
| Tuesday | 4853 |
| Wednesday | 12 038 |
| Thursday | 15 243 |
| Friday | 4695 |
| Saturday | 4801 |
| Sunday | 11 856 |

(*a*)On which day did she take the least number of steps?

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

**(1)**

(*b*)Write the number 12 038 in words.

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**(1)**

(*c*)Round the number 4853 correct to the nearest hundred.

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

**(1)**

Two of the numbers in the table are multiples of 5.

(*d*)Write down these two numbers.

............................ , ............................

**(2)**

Jan takes 1200 steps to walk one kilometre.

(*e*)Use this information to work out how many kilometres Jan walked on Thursday.

 Give your answer correct to the nearest kilometre.

.......................................... kilometres

**(2)**

(*f*)Work out the mean number of steps per day Jan took last week.

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

**(2)**

**(Total for Question 1 is 9 marks)**

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**2**

*L* and *M* are points on a circle, centre *O*.

(*a*)Write down the mathematical name for the straight line *OM*.

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

**(1)**

(*b*)Write down the mathematical name for the straight line *LM*.

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

**(1)**

(*c*)On the diagram, shade a segment.

**(1)**

**(Total for Question 2 is 3 marks)**

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**3** The bar chart shows information about the population of each of five countries in 2013.

(*a*)Write down the population of Sri Lanka.

.......................................... million

**(1)**

(*b*)Write down the population of the UAE.

.......................................... million

**(1)**

(*c*)Which country had a population of 41 million?

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

**(1)**

Suki says,

 “In 2013, the population of Singapore was  of the population of Sri Lanka.”

(*d*)Is Suki correct?

 You must give a reason for your answer.

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**(1)**

In 2013, the population of Saudi Arabia was 29 million.

(*e*)Draw a bar on the bar chart to show this information.

**(1)**

In 2013, the ratio of the population of India to the population of the UK, in millions, was

1252 : 64

(*f*)Write the ratio 1252 : 64 in its simplest form.

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

**(2)**

**(Total for Question 3 is 7 marks)**

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**4** The table shows information about average temperatures for five months in Beijing.

|  |  |
| --- | --- |
| **Month** | **Average temperature(**°**C)** |
| October | 13 |
| November | 5 |
| December | −2 |
| January | −4 |
| February | −1 |

(*a*)Which of these months has the lowest average temperature?

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

**(1)**

(*b*)Work out the difference between the average temperature in October and the average

 temperature in December.

....................................................°C

**(2)**

The average temperature in June is 28 °C higher than in January.

(*c*)Work out the average temperature in June.

....................................................°C

**(2)**

**(Total for Question 4 is 5 marks)**

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**5** Here are 8 cards.

Each card has a letter on it.

Malik takes at random one of these cards.

(*a*)Write down the word from the box that best describes the likelihood that Malik takes

 (i) a card with the letter **B**,

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

 (ii) a card with the letter **D**.

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

**(2)**

(*b*)Find the probability that Malik takes a card with the letter **A**.

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

**(2)**

Sunil has two sets of cards, Set 1 and Set 2

Each card has a letter on it.

Sunil takes one card from Set 1

He then takes one card from Set 2

(*c*)List all the possible combinations of cards he could get.

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**(2)**

**(Total for Question 5 is 6 marks)**

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**6** (*a*)Simplify *p + p + p + p – p*

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

**(1)**

(*b*)Simplify 6 × *e* × 5 × *f*

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

**(1)**

(*c*)Solve 8*m* = 40

*m =* ..........................................

**(1)**

(*d*)Solve 20 – *k* = 16

*k* = ..........................................

**(1)**

*a* = 3*c* + *f*

(*e*)Work out the value of *c* when *a* = 23 and *f* = 5

*c* = ..........................................

**(3)**

**(Total for Question 6 is 7 marks)**

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**7** (*a*)Work out  of 738 kg.

.......................................... kg

**(2)**

There are 24 horses in a field.

17 of the horses are brown.

(*b*)What fraction of the horses in the field are **not** brown?

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

**(2)**

(*c*)Show that 

**(2)**

**(Total for Question 7 is 6 marks)**

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**8**

*ABC* is a straight line.

*ABDE* is a quadrilateral.

(*a*)(i) Work out the value of *x*.

*x* = .......................................................

 (ii) Give a reason for your answer.

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

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

**(2)**

(*b*)Work out the value of *y*.

*y* = .......................................................

**(3)**

Each exterior angle of a regular polygon is 18°

(*c*)Work out the number of sides of this regular polygon.

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

**(2)**

**(Total for Question 8 is 7 marks)**

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**9** Here is a list of ingredients for making 24 Rocky Road Crunchy Bars.

|  |
| --- |
| **Rocky Road Crunchy Bars**Ingredients for 24 bars125 gramsbutter300 gramschocolate3 tablespoonssyrup200 gramsbiscuits100 gramsmarshmallows2 teaspoonsicing sugar |

Silvester wants to make 30 Rocky Road Crunchy Bars.

(*a*)Work out the amount of marshmallows he needs.

....................................................... grams

**(2)**

Nigella makes some Rocky Road Crunchy Bars.

She uses 850 grams of chocolate.

(*b*)Work out the number of Rocky Road Crunchy Bars she makes.

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

**(2)**

**(Total for Question 9 is 4 marks)**

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**10** In a sale, normal prices are reduced by 35%.

The normal price of a bed is $1200.

Work out the sale price of the bed.

$ .......................................................

**(Total for Question 10 is 3 marks)**

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**11** The diagram shows a rectangle and a circle.

The rectangle has length 30 cm and width 20 cm.

The circle has radius 8 cm.

Work out the area of the shaded region.

Give your answer correct to 3 significant figures.

....................................................... cm2

**(Total for Question 11 is 4 marks)**

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**12** On the grid, draw the graph of *y* + 2*x* = 6 for values of *x* from –2 to 4.

 **(Total for Question 12 is 4 marks)**

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**13** The area of the floor of a room is 12 m2.

Change 12 m2 into cm2.

....................................................... cm2

**(Total for Question 13 is 2 marks)**

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**14** (*a*)Simplify 

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

**(2)**

(*b*)Write down the inequality shown on the number line.

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

**(2)**

**(Total for Question 14 is 4 marks)**

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**15**

(*a*)On the grid above, translate shape **S** by 1 square to the left and 3 squares down.

**(1)**

(*b*)On the grid, rotate triangle **T** 90° clockwise about (0, 2).

**(2)**

**(Total for Question 15 is 3 marks)**

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**16** The table gives information about the weights of 20 rugby players.

|  |  |
| --- | --- |
| **Weight (*w* kg)** | **Frequency** |
| 80 < *w* ≤ 90 | 3 |
| 90 < *w* ≤ 100 | 5 |
| 100 < *w* ≤ 110 | 7 |
| 110 < *w* ≤ 120 | 4 |
| 120 < *w* ≤ 130 | 1 |

(*a*)Write down the modal class.

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

**(1)**

(*b*)Work out an estimate for the total weight of these 20 rugby players.

....................................................... kg

**(3)**

**(Total for Question 16 is 4 marks)**

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**17** Here is an isosceles triangle.

Work out the area of the triangle.

Give your answer correct to 3 significant figures.

....................................................... cm2

**(Total for Question 17 is 4 marks)**

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**18** The diagram shows a parallelogram *ABCD*.

Angle *BAD* = (7*x* – 20)°

Angle *ADC =* (160 – 3*x*)°

Work out the value of *x*.

Show clear algebraic working.

*x* = .......................................................

**(Total for Question 18 is 3 marks)**

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**19** *m* = 34 × 53

*n* = 33 × 52 × 11

(*a*)Find the Lowest Common Multiple (LCM) of *m* and *n*.

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

**(2)**

(*b*)Find the Highest Common Factor (HCF) of 5*m* and 3*n*.

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

**(2)**

**(Total for Question 19 is 4 marks)**

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**20** Here is the straight line **L** drawn on a grid.

Find an equation for **L**.

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**(Total for Question 20 is 2 marks)**

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**21** The table shows the population, correct to two significant figures, of each of six countries

in April 2016.

|  |  |
| --- | --- |
| **Country** | **Population (April 2016)** |
| Hungary | 9.8 × 106 |
| Mexico | 1.3 ×108 |
| Thailand | 6.8 ×107 |
| Nigeria | 1.9 ×108 |
| Singapore | 5.7 ×106 |
| Egypt | 9.3 ×107 |

(*a*) Write 9.3 ×107 as an ordinary number.

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

**(1)**

(*b*)Which of these countries had the least population?

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

**(1)**

The population of China was 1.382 × 109 in April 2016.

The population of India was 1.327 × 109 in April 2016.

(*c*)Work out the difference between the population of China and the population of India

 in April 2016.

 Give your answer in standard form.

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

**(2)**

**(Total for Question 21 is 4 marks)**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**22** (*a*)Solve 7*x* + 2*y* = 16

 5*x* – 2*y* = 20

Show clear algebraic working.

*x* = .......................................................

*y* = .......................................................

**(3)**

(*b*)Expand and simplify (*k* + 9)(*k* – 5)

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

**(2)**

**(Total for Question 22 is 5 marks)**

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**TOTAL FOR PAPER: 100 MARKS**