**Revision**

**Practice paper 1**

**Answer ALL TWENTY FOUR questions.**

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

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

**1** Here are the first five terms of a number sequence.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3 | 10 | 17 | 24 | 31 |

(*a*)Write down the next two terms of the sequence.

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

**(2)**

(*b*)Explain how you worked out your terms.

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

**(1)**

(*c*)Work out the 18th term of the sequence.

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

**(2)**

The 35th term of the sequence is 241.

(*d*)Work out the 34th term of the sequence.

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

**(1)**

**(Total for Question 1 is 6 marks)**

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

**4** The table shows the midday temperature in each of five cities on Tuesday one week.

|  |  |
| --- | --- |
| **City** | **Temperature (°C)** |
| Anchorage | −11 |
| Beijing | −2 |
| Dhaka | 25 |
| Moscow | −5 |
| Yellowknife | −30 |

(*a*)Which of these cities had the lowest temperature?

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

**(1)**

(*b*)Work out the difference between the temperature in Dhaka and the temperature in Moscow.

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

**(2)**

By midday on Wednesday, the temperature in Anchorage had fallen by 6 °C.

(*c*)Work out the temperature in Anchorage at midday on Wednesday.

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

**(2)**

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

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

**6**

(*a*)Shade  of the shape.

**(1)**

(*b*)Write 40% as a decimal.

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

**(1)**

*B* = 6*e* – 3*f*

(*c*)Work out the value of *B* when *e* = 3.2 and *f* = –4

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

**(2)**

**(Total for Question 6 is 4 marks)**

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

**7**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 |

From the numbers in the box

(i) write down a factor of 120.

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

(ii) find the cube root of 32 768.

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

(iii) write down a prime number.

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

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

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**8** *A*, *B* and *C* are points on a circle, centre *O*.

(*a*)(i) Write down the mathematical name for the line *OC*.

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

**(1)**

In the diagram, *ABCD* is a quadrilateral.

*DA* and *CB* are parallel lines.

*AFD* and *EFCG* are straight lines.

(*b*)(i) Find the size of angle *y*.

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

 (ii) Give a reason for your answer.

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

**(2)**

(*c*)(i) Find the size of angle *w*.

*w* = ......................................... °

 (ii) Give a reason for your answer.

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

**(2)**

**(Total for Question 8 is 5 marks)**

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**9** (*a*)Simplify *x*2 + *x*2 + *x*2

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

**(1)**

(*b*)Simplify 4*e* + 2*f* – 6*e* + 7*f*

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

**(2)**

(*c*)Simplify 2 × *a* × 4 × *b*

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

**(1)**

(*d*)Solve 

*w* = .........................................

**(1)**

(*e*) Solve 5*y* + 2 = 14

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

**(2)**

**(Total for Question 9 is 7 marks)**

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

**11** (*a*) Factorise 10*a* + 25

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

**(1)**

(*b*)Factorise 7*w*2 − 4*w*

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

**(1)**

(*c*)Expand *p*2(*p* – 5)

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

**(2)**

(*d*)Expand and simplify (*x* – 3)(*x* + 7)

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

**(2)**

**(Total for Question 11 is 6 marks)**

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**12**

(*a*)On the grid, enlarge shape **P** with scale factor 2 and centre (7, 3)

 Label the new shape **Q**.

**(2)**

(*b*)On the grid, rotate shape **P** through 90° anticlockwise about the point (7, 3)

 Label the new shape **R**.

**(2)**

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

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

**14** The table shows information about the lengths, in cm, of 40 leaves.

|  |  |
| --- | --- |
| **Length (*L* cm)** | **Frequency** |
| 0 < *L* ⩽ 1 | 4 |
| 1 < *L* ⩽ 2 | 5 |
| 2 < *L* ⩽ 3 | 11 |
| 3 < *L* ⩽ 4 | 14 |
| 4 < *L* ⩽ 5 | 6 |

(*a*)Write down the modal class.

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

**(1)**

(*b*)Work out an estimate for the mean length of the 40 leaves.

 Give your answer correct to 1 decimal place.

......................................... cm

**(4)**

**(Total for Question 14 is 5 marks)**

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**19**

Calculate the length of *AC*.

Give your answer correct to 3 significant figures.

......................................... cm

**(Total for Question 19 is 3 marks)**

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**20** In 2014, Donald’s weekly pay was $640.

In 2015, Donald’s weekly pay was $668.80.

(*a*)Work out the percentage increase in Donald’s pay between 2014 and 2015.

......................................... %

**(3)**

In 2015, Donald’s weekly pay was 95% of his weekly pay in 2016.

(*b*)Work out Donald’s weekly pay in 2016.

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

**(3)**

**(Total for Question 20 is 6 marks)**

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**23** The table shows the diameters, in kilometres, of five planets.

|  |  |
| --- | --- |
| **Planet** | **Diameter (km)** |
| Venus | 1.2 × 104 |
| Jupiter | 1.4 × 105 |
| Neptune | 5.0 × 104 |
| Mars | 6.8 × 103 |
| Saturn | 1.2 × 105 |

(*a*)Write 1.4 × 105 as an ordinary number.

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

**(1)**

(*b*)Which of these planets has the smallest diameter?

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

**(1)**

(*c*)Calculate the difference, in kilometres, between the diameter of Saturn and the

 diameter of Neptune.

 Give your answer in standard form.

.......................................................km

**(2)**

**(Total for Question 23 is 4 marks)**

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**24** Mabintou invested $7500 for 3 years at 4% per year compound interest.

Calculate the value of her investment at the end of 3 years.

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

**(Total for Question 24 is 3 marks)**

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**TOTAL FOR PAPER**