

Mathematics Assessment

**Band 2 – Test 1**

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**Calculators allowed on questions with this symbol:**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Teacher: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Remember:

* The test is 1 hour long.
* You **must not** use a calculator for any question in this test without a calculator symbol.
* You will need: pen, pencil, protractor, rubber and a ruler.
* Some formulae you might need are on the next page.
* Try to answer all questions.
* Write all your answers and working in the spaces provided in this test paper – do not use any rough paper. Marks may be awarded for working.
* Check your work carefully.
* Don’t spend too long on one question. Leave it and try the next one.

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| --- |
| Formulae Sheet |
| Perimeter, area, surface area and volume formulae |
| Sphere | Cone |
|  |  |
| Volume = $\frac{4}{3}$πr3Surface Area = 4πr2 | Volume = $\frac{1}{3}$ πr2hCurved Surface Area = πrl |

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| **A – Ratio and Proportion** |
| 1. | Write these fractions in order of size, starting with the smallest.$\frac{1}{2}$ $\frac{2}{3}$ $\frac{3}{4}$ $\frac{2}{5}$\_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_  | / 2 |
| 2. | Calculate:$\frac{3}{10}$ of 80g \_\_\_\_\_\_g36% of £400 £\_\_\_\_\_\_ | / 4 |
| 3. | Complete the table below:

|  |  |  |
| --- | --- | --- |
| **Fraction** | **Decimal** | **Percentage** |
| $\frac{1}{4}$  | 0.25 |  |
| $\frac{2}{5}$  |  | 40% |
|  | 0.85 | 85% |

  | / 3 |
| 4. | This is a list of ingredients for making a pear & almond crumble for 4 people.

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| Ingredients for **4** people. |
| 80 g plain flour |
| 60 g ground almonds |
| 90 g soft brown sugar |
| 60 g butter |
| 4 ripe pears |

 Work out the amount of each ingredient needed to make a pear & almond crumble for **10** people. \_\_\_\_ g plain flour \_\_\_\_ g ground almonds \_\_\_\_ g soft brown sugar \_\_\_\_ g butter \_\_\_\_ ripe pears  | / 3 |
| 5. | Potatoes cost £9 for a 12.5 kg bag at a farm shop. The same type of potatoes cost £1.83 for a 2.5 kg bag at a supermarket. Where are the potatoes the better value, at the farm shop or at the supermarket? You must show your working.http://www.macgasm.net/wp-content/uploads/2011/11/sack-of-potatoes.jpg\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  | / 3 |
| **B – Number**  |
| 6. | Work out2 × 3 + 4 = \_\_\_\_10 – 2 × 5 = \_\_\_\_16 ÷ (2 × 4) = \_\_\_\_\_  | / 3 |
| 7. | Round 5.837 to 1 decimal place.  \_\_\_\_\_\_ | / 1 |
| 8. | Find the highest common factor of 48 and 72.\_\_\_\_\_\_  | / 3 |
| **C - Algebra** |
| 9. | Draw the graph of y = 2 on the axes below. | / 1 |
| 10. | Here are the first 5 terms of an arithmetic sequence. 6, 11, 16, 21, 26Find an expression, in terms of *n*, for the *n*th term of the sequence. \_\_\_\_\_\_\_\_\_\_  | / 2 |
| 11. | Simplify 5*p* + 7*q* + 3*p* – 2*q*\_\_\_\_\_\_\_\_\_\_\_\_\_\_  | / 2 |
| 12. | Work out the value of 3*p* + 4*q* when *p* = 5 and *q* = –2\_\_\_\_\_\_\_\_\_\_\_\_\_\_  | / 2 |
| 13. | Solve 2x + 3 = 11x = \_\_\_\_\_\_ | / 2 |
| **D – Shape, Space and Measure** |
| 14. | Diagram **NOT** accurately drawnWork out the size of the angle marked *y*º. Give a reason for your answer.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  | / 2 |
| 15. | The diagram shows a sketch of triangle *ABC.**BC* *=* 7.3 cm. *AC* = 8 cm. Angle *C* *=* 38°.Make an accurate drawing of triangle *ABC.*  | / 3 |
| 16. | The diagram shows a cube. In the space below, draw a sketch of a net for the cube. | / 2 |
| 17. | The diagram shows a sketch of a solid shape. The solid shape is made from six centimetre cubes.Diagram **NOT** accurately drawnOn the grid of centimetre squares, draw the front elevation of the solid shape from the direction marked with the arrow.  | / 2 |
| 18. |  Diagram **NOT** accurately drawnThe diagram shows a parallelogram. Calculate its area.\_\_\_\_\_\_cm²  | / 2 |
| 19. | Change 50 000 mm2 to cm2.\_\_\_\_\_\_cm²  | / 2 |
| **E – Data Handling** |
| 20. | Here is a bar chart showing the number of hours of TV that Helen and Robin watched last week.Write down the number of hours of TV that Helen watched on Monday. \_\_\_\_\_\_\_\_\_\_On which day did Helen and Robin watch the same number of hours of TV? . \_\_\_\_\_\_\_\_\_\_  | / 2 |
| 21. | Chloe made a list of her homework marks.4 5 5 5 4 3 2 1 4 5Write down the mode of her homework marks. \_\_\_\_\_Work out her mean homework mark. \_\_\_\_\_  | / 3 |
| **F - Probability** |
| 22. | Four teams, City, Rovers, Town and United play a competition to win a cup. Only one team can win the cup. The table below shows the probabilities of City or Rovers or Town winning the cup.

|  |  |  |  |
| --- | --- | --- | --- |
| City | Rovers | Town | United |
| 0.38 | 0.27 | 0.15 |  |

 Work out the probability of United winning the cup.  | / 2 |
| 23. | 60 British students each visited one foreign country last week.The two-way table shows some information about these students. Complete the two-way table.

|  |  |  |  |
| --- | --- | --- | --- |
| **France** | **Germany** | **Spain** | **Total** |
| **Female** |  |  | 9 | 34 |
| **Male** | 15 |  |  |  |
| **Total** |  | 25 | 18 | 60 |

  | / 2 |