

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.

|  |  |
| --- | --- |
| Formulae Sheet | |
| Perimeter, area, surface area and volume formulae | |
| Sphere | Cone |
|  |  |
| Volume = πr3  Surface Area = 4πr2 | Volume = πr2h  Curved Surface Area = πrl |

|  |  |  |
| --- | --- | --- |
| **A – Ratio and Proportion** | | |
| 1. | Write these fractions in order of size, starting with the smallest.    \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_ | / 2 |
| 2. | Calculate:  of 80g \_\_\_\_\_\_g  36% of £400 £\_\_\_\_\_\_ | / 4 |
| 3. | Complete the table below:   |  |  |  | | --- | --- | --- | | **Fraction** | **Decimal** | **Percentage** | |  | 0.25 |  | |  |  | 40% | |  | 0.85 | 85% | | / 3 |
| 4. | This is a list of ingredients for making a pear & almond crumble for 4 people.   |  | | --- | | 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 out  2 × 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, 26  Find 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 = 11  x = \_\_\_\_\_\_ | / 2 |
| **D – Shape, Space and Measure** | | |
| 14. | Diagram **NOT** accurately drawn  Work 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 drawn  On 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 drawn  The 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 5  Write 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 |