

Mathematics Assessment

**Band 3 – 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: compasses, 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. | Work out:  -  3 x 1 | / 5 |
| 2. | Work out 5.3 x 0.94  \_\_\_\_\_ | / 3 |
| 3. | The normal cost of a coat is £94 In a sale the cost of the coat is reduced by 36%  Work out the sale price of the coat.  £\_\_\_\_\_\_\_\_ | / 3 |
| 4. | Write these numbers in order of size. Start with the smallest number.  53% 0.7  \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_ | / 2 |
| 5. | Rosa prepares the ingredients for pizzas. She uses cheese, topping and dough in the ratio 2 : 3 : 5. Rose uses 70 grams of dough. Work out the number of grams of cheese and the number of grams of topping Rosa uses.  Cheese \_\_\_\_g  Topping \_\_\_\_g | / 3 |
| **B – Number** | | |
| 6. | Use the information that 257 × 34 = 8738 to find the value of  2.57 × 34 = \_\_\_\_\_\_\_  873.8 ÷ 2.57 = \_\_\_\_\_\_\_ | / 2 |
| 7. | Work out    Write down all the figures on your calculator display.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Give your answer to 3 significant figures.  \_\_\_\_\_\_\_ | / 3 |
| 8. | Simplify t × t2 \_\_\_\_\_\_\_  Simplify m5 ÷ m3 \_\_\_\_\_\_\_ | / 2 |
| 9. | Write the reciprocal of 2.  \_\_\_\_\_\_\_ | / 1 |
| **C - Algebra** | | |
| 10. | Expand  mn(n – m)  \_\_\_\_\_\_\_\_\_\_ | / 1 |
| 11. | Solve 5p + 7 = 12 – 3p  p = \_\_\_\_\_\_\_ | / 2 |
| 12. | Compasses cost *c* pence each. Rulers cost *r* pence each.  Write down an expression for the total cost, in pence, of 2 compasses and 4 rulers.  \_\_\_\_\_\_\_\_\_\_\_\_ | / 2 |
| 13. | Show the inequality x > 1 on the number line below. | / 1 |
| 14. | Complete the table of values for y = 4x + 3   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *x* | −2 | −1 | 0 | 1 | 2 | | *y* |  | −1 |  |  | 11 |   On the grid, draw the graph of y = 4x + 3 | / 4 |
| **D – Shape, Space and Measure** | | |
| 15. | Diagram **NOT** accurately drawn  Write down the size of the angle marked *x.* \_\_\_\_\_\_º  Give a reason for your answer.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Write down the size of the angle marked *y.* \_\_\_\_\_\_º  Give a reason for your answer.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | / 4 |
| 16. | The diagram shows the positions of two ships, *A* and *B*.    A ship *C* is on a bearing of 064° from ship *A*. Ship *C* is also on a bearing of 290° from ship *B*. In the space above, draw an accurate diagram to show the position of ship *C*. Mark the position of ship *C* with a cross . Label it *C*. | / 3 |
| 17. | Diagram **NOT** accurately drawn  The diagram shows a shape. Work out the area of the shape.  \_\_\_\_\_\_\_\_ cm² | / 3 |
| 18. | Calculate the volume of this cuboid.    \_\_\_\_\_\_\_\_ cm³ | / 2 |
| 19. | A car travels for 3 hours. Its average speed is 75 km/h.  Work out the total distance the car travels.  \_\_\_\_\_\_\_\_\_\_ km | / 2 |
| **E – Data Handling** | | |
| 20. | Sandra carries out a survey of 90 Year 11 students. She asks them their favourite snack. She draws this accurate pie chart.    Use the pie chart to complete the table.   |  |  |  | | --- | --- | --- | | **Snack** | **Frequency** | **Angle** | | Burger | 20 |  | | Chips | 45 | 180º | | Hot dog |  |  | | Kebab |  |  | | **Total** | **90** |  | | / 3 |
| **F - Probability** | | |
| 21. | 2 coins are thrown and their scores are added together. Copy and complete this sample space.   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | Coin | Dice | | | | | | | |  | **1** | **2** | **3** | **4** | **5** | **6** | | **1** | 2 |  |  |  | 6 |  | | **2** |  |  |  |  |  |  | | **3** |  | 5 |  |  |  |  | | **4** |  |  |  |  |  |  | | **5** |  |  |  |  |  | 11 | | **6** |  |  | 9 |  |  |  |   Use the diagram to find the probability scoring a 6. \_\_\_\_\_ | / 3 |