

Mathematics Assessment

**Band 2 – Test 3**

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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.$\frac{1}{4}$ $\frac{1}{6}$ $\frac{1}{3}$ $\frac{2}{5}$\_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_  | / 2 |
| 2. | Calculate:$\frac{4}{7}$ of £56 £\_\_\_\_\_\_64% of 600ml \_\_\_\_\_\_ml | / 4 |
| 3. | Complete the table below:

|  |  |  |
| --- | --- | --- |
| **Fraction** | **Decimal** | **Percentage** |
| $\frac{1}{8}$  | 0.125 |  |
| $\frac{7}{10}$  |  | 70% |
|  | 0.9 | 90% |

  | / 3 |
| 4. | This is a recipe for making Spaghetti Carbonara for **4** people.

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| **Spaghetti Carbonara**Ingredients for **4** people400 g of spaghetti120 g of bacon2 tablespoons of oil4 eggs50 g of cheese |

 Bill is making Spaghetti Carbonara for **6** people. Work out the amount he needs. \_\_\_\_ g of spaghetti \_\_\_\_ g of bacon \_\_\_\_ tablespoons of oil \_\_\_\_ eggs \_\_\_\_ g of cheese  | / 3 |
| 5. | Two shops, Food Mart and Jim’s Store, both sell Kreemy Yoghurts. At which shop are Kreemy Yoghurts best value for money? You must show all your working.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | / 3 |
| **B – Number**  |
| 6. | Work out3 × 3 – 5 = \_\_\_\_\_20 ÷ (12 – 2) = \_\_\_\_\_7 + 8 ÷ 4 = \_\_\_\_\_ | / 3 |
| 7. | Round 11.4673 to 1 decimal place.  \_\_\_\_\_\_ | / 1 |
| 8. | Find the highest common factor of 120 and 150.\_\_\_\_\_\_  | / 3 |
| **C - Algebra** |
| 9. | Draw the graph of y = -4 on the axes below. | / 1 |
| 10. | Here are the first 5 terms of an arithmetic sequence. 2, 8, 14, 20, 26Find an expression, in terms of *n*, for the *n*th term of the sequence. \_\_\_\_\_\_\_\_\_\_  | / 2 |
| 11. | Simplify 7*x* + 3*y* + 2*x* - 2*y*\_\_\_\_\_\_\_\_\_\_\_\_\_\_  | / 2 |
| 12. | Work out the value of 2*m* + 7*n* when *m* = 4 and *n* = –2\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | / 2 |
| 13. | Solve 3a - 4 = 17a = \_\_\_\_\_\_ | / 2 |
| **D – Shape, Space and Measure** |
| 14. | Work out the value of *a*.*a* = \_\_\_\_\_º  | / 2 |
| 15. | The diagram shows a sketch of triangle *ABC*.Diagram **NOT** accurately drawn*AB* = 8 cm. *AC* = 6 cm. Angle *A* = 52°.In the space below, make an accurate drawing of triangle *ABC*. | / 3 |
| 16. | The diagram shows a cuboid. In the space below, draw a sketch of a net for the cuboid. | / 2 |
| 17. | The diagram shows a solid object made of 6 identical cubes.Diagram **NOT** accurately drawnOn the grid below, draw the side elevation of the solid object from the direction of the arrow.  | / 2 |
| 18. | The diagram shows a trapezium of height 3 m.Find the area of this trapezium\_\_\_\_\_\_cm²  | / 2 |
| 19. | Change 9cm³ to mm³.\_\_\_\_\_\_mm³  | / 2 |
| **E – Data Handling** |
| 20. | Sophie asked the students in her class how they travelled to school. The bar chart shows some information about the results, for everyone in Sophie’s class. 4 students travel to school by car.7 students travel to school by bus.Complete Sophie’s bar chart. | / 2 |
| 21. | Mr Smith kept a record of the number of absences for each student in his class for one term. Here are his results.0 0 0 8 4 5 5 3 2 1Write down the mode. \_\_\_\_\_Work out the mean. \_\_\_\_\_  | / 3 |
| **F - Probability** |
| 22. | A box contains bricks which are orange or blue or brown or yellow. Duncan is going to choose one brick at random from the box. The table shows each of the probabilities that Duncan will choose an orange brick or a brown brick or a yellow brick.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Colour | Orange | Blue | Brown | Yellow |
| Probability | 0.35 |  | 0.24 | 0.19 |

Work out the probability that Duncan will choose a blue brick.  | / 2 |
| 23. | 70 students each chose one P.E. activity. They chose one of basketball or swimming or football. The two-way table shows some information about their choices. Complete the two-way table.

|  |  |  |  |
| --- | --- | --- | --- |
| **Basketball** | **Swimming** | **Football** | **Total** |
| **Female** | 10 |  |  | 37 |
| **Male** |  | 17 |  |  |
| **Total** | 19 |  | 22 | 70 |

  | / 2 |