

Mathematics Assessment

**Bands 1-3 Problem Solving – Test 3**



**Calculators not allowed**

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

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

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

Remember:

* The test is 1 hour long.
* You **must not** use a calculator for any question in this test.
* You will need: pen, pencil, rubber and a ruler.
* 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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| --- | --- | --- |
| 1. | An equilateral triangle has a perimeter of 12 cm. Two of the triangles are joined together, edge to edge. What is the new perimeter?  \_\_\_\_\_\_\_\_ cm | / 2 |
| 2. | Mr Williams is organising a school trip. Going on the school trip there will be   * 134 students from Year 8, * 125 students from Year 9, * and 30 adults.   Mr Williams must hire enough coaches so that everyone on the trip has a seat. All the coaches that Mr Williams can hire seat 54 people. What is the smallest number of coaches that Mr Williams has to hire? You must show all your working.  \_\_\_\_\_\_\_ | / 3 |
| 3. | Janice asks 100 students if they like biology or chemistry or physics best.   * 38 of the students are girls. * 21 of these girls like biology best. * 18 boys like physics best. * 7 out of the 23 students who like chemistry best are girls.   Work out the number of students who like biology best.  \_\_\_\_\_\_\_ | / 4 |
| 4. | A piece of wire is 60cm long. It is bent into a shape that consists of three identical squares. How long is the side of a square?  \_\_\_\_\_\_\_\_ cm | / 3 |
| 5. | The three points, A, B and C, on this graph are equally spaced. What are the co-ordinates of point B?  ( \_\_\_\_ , \_\_\_\_ ) | / 2 |
| 6. | The letter ‘T’ on this square grid has an area of 200cm². Calculate the perimeter of the ‘T’.  \_\_\_\_\_\_\_\_ cm | / 4 |
| 7. | Mr Shah is working out the cost of the electricity he used in April.    Mr Shah has to pay  20p for each of the first 70 units used in April  and 10p for each of all the other units used in April.  Work out the total cost of the electricity he used in April.  £ \_\_\_\_\_\_\_\_\_\_\_\_\_ | / 4 |
| 8. | The length of a flight from Krakow to Liverpool is 2 hours 50 minutes. The 17 15 (Krakow time) flight from Krakow to Liverpool is delayed by 75 minutes. The time in Krakow is one hour ahead of the time in Liverpool. Work out the time (Liverpool time), that the flight is due to arrive in Liverpool.  \_\_\_\_\_\_\_\_\_\_\_\_\_  There are 228 passengers on the flight. Two thirds of the passengers did not have a meal during the flight. How many passengers had a meal during the flight?  \_\_\_\_\_\_\_\_\_\_\_\_\_ | / 6 |
| 9. | A length of tape is 135 centimetres long. It is cut into two pieces. The first piece is twice as long as the second piece. How long is the shorter of the two pieces of tape?  \_\_\_\_\_\_\_\_ cm | / 3 |
| 10. | Mrs Long has to buy 270 chocolate biscuits. She finds chocolate biscuits at 3 different shops.   |  |  |  | | --- | --- | --- | | **Shop A**  9 biscuits in a pack  £1.80 per pack  Buy one pack and get one extra pack free | **Shop B**  18 biscuits in a pack  £2.50 per pack  Buy two packs and get one extra pack free | **Shop C**  27 biscuits in a pack  £2.60 per pack |   In which shop are the biscuits cheaper? You must show your working. | / 4 |
| 11. | The diagram shows a wall in Vicky’s living room.    Vicky plans to wallpaper this wall. She buys some rolls of wallpaper.  Each roll of wallpaper is 53 cm wide and 12 m long. The cost of one roll of wallpaper is £12.45.  Work out the cost of wallpapering the wall.  £ \_\_\_\_\_\_\_\_\_\_\_\_\_ | / 5 |
| 12. | T-shirts normally cost £12 each. Two shops have a special offer on these T-shirts.    Stephen wants to buy exactly 30 T-shirts. Work out at which shop, Stephen will get the better deal. You must show clearly how you got your answer. | / 5 |
| 13. | The diagram shows three identical rectangles that have their sides parallel to the axes.  (a) What are the dimensions of each rectangle?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  (b) Find the co-ordinates of point C  ( \_\_\_\_ , \_\_\_\_ ) | / 7 |