YEAR 9 TEST 2 Homework Assessment CALCULATOR ALLOWED Higher

NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TEACHER \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- | --- | --- | --- |
| Area | /10 | Ratio | /10 | Sequences | /10 |

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| --- | --- | --- |
|  | **Area** |  |
| **1.**  **S** | Work out the area of this triangle.        ………………………… cm² | **(2)** |
| **2.**  **F** | *ABCD* is a trapezium.  7 cm  Calculate the area of the trapezium.    ………………………… cm² | **(2)** |
| **3.**  **F** | Here is a circle.  The radius of the circle is 4 cm.  Work out the area of the circle.  Give your answer in terms of π.        ………………………… cm | **(3)** |
| **4.**  **M** | The diagram shows a tile.  The tile is in the shape of a semicircle of radius 8 cm.  Work out the area of the tile.  Give your answer correct to one decimal place.    ………………………… cm | **(3)** |
|  | **TOTAL** | **(10)** |
|  |  |  |
|  | **Ratio** |  |
| **1.**  **F** | The cost of 6 cups is £8.40 Work out the cost of 10 of these cups.     £……………………… | **(2)** |
| **2.**  **F** | A street map has a scale of 1 : 25000.  Church Road is 4 cm long on the map.  What is the actual length of Church road in kilometres?   ………………… km | **(2)** |
| **3.**  **M** | Soap powder is sold in three sizes of box.    2 kg of soap powder costs £1.79  5 kg of soap powder costs £4.35  9 kg of soap powder costs £8.54  Which size of box is the best value for money? Explain your answer. | **(3)** |
| **4.**  **F** | A student bought a pair of sunglasses in the USA. He paid $34.50  In England, an identical pair of sunglasses costs £27.99  The exchange rate is £1 = $1.32  In which country were the sunglasses cheaper, and by how much?  Show all of your working. | **(3)** |
|  |  | **(10)** |
|  |  |  |
|  | **Sequences** |  |
| **1.**  **F** | Here are the first four terms of a number sequence.   |  |  |  |  | | --- | --- | --- | --- | | 11 | 14 | 17 | 20 |     a) Find the 10th term in this sequence. …………………………  b) The number 100 is **not** a term in this sequence.        Explain why.        ...........................................................................................................................................    ........................................................................................................................................... | **(1)**    **(1)** |
| **2.**  **F** | Here are some patterns made from sticks.    pattern 1 pattern 2 pattern 3  a) How many sticks are needed for pattern number 9?   …………………………  Sam says that there is a pattern which will need 78 sticks.  b) Is Sam correct?  You must give a reason for your answer.          ...........................................................................................................................................    ........................................................................................................................................... | **(1)**  **(1)** |
| **3.**  **F** | Here are the first five terms of a number sequence.  41        37        33        29        25  Write an expression, in terms of *n*, for the *n*th term of this sequence.           ………………………… | **(2)** |
| **4.**  **F** | The *n*th term of a different sequence is 3*n*2 – 2  Find the 3rd term of this sequence.  ………………………… | **(2)** |
| **5.**  **M** | Here are the first four terms of a quadratic sequence.  4 7 12 19 28  What is the rule for the nth term of this sequence         ………………………… | **(2)** |
|  |  | **(10)** |