Year 9 Homework Assessment TEST 2 Calculator allowed Enhanced

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

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| Circles and Pythagoras |  /10 | Ratio | /10 | Sequences | /10 |

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|  | **Circles and Pythagoras Theorem**  |  |
| **1.****F** | The diagram shows a tile.15 cmThe tile is a semicircle of diameter 15 cm.Work out the perimeter of the tile. Give your answer correct to one decimal place.  ………………………… cm |  **(2)** |
| **2.****F** | The diagram shows a semicircle drawn inside a rectangle.13 cmWork out the area of the shaded region.Give your answer correct to 3 s.f.    ………………………… cm² |  **(2)** |
| **3.****F**12 cm7 cm | Work out the area of the triangle.     ………………………… cm² |  **(3)** |
| **4.****M** | *ABCD* is a trapezium.*AD* = 12 cm *AB* = 10 cm *BC* = 4 cm Angle *ADC* = angle *BCD* = 90°Calculate the area of the trapezium ABCD.  4 cm12 cm10 cmABCD       ………………………… cm |  **(3)** |
|  |  | **(10)** |
|  | **Ratio**  |  |
| **1.****F** | Lewis has a copper pipe with a length of 1.5 m and a mass of 800 grams.He cuts a piece of the copper pipe with a length of 70 cm.Work out the mass of this piece of copper pipe. ………………………… grams |  **(3)** |
| **2.****S** | The mass of 8 m3 of copper is 44 800 kg.a) Work out the density of copper.………………………… kg/m3The density of zinc is 7125 kg/m3.b) Work out the mass of 5 m3 of zinc.………………………… kg | **(2)****(2)** |
| **3.****F** | *y* is directly proportional to *x*.When *x* = 5, *y* = 80a) Find a formula for *y* in terms of *x*.    y = ………………………… b) Calculate the value of y when *x* = 40    y = …………………………  | **(2)****(1)** |
|  |  | **(10)** |
|  |  |  |
|  | **Sequences** |  |
| **1.****S** | Here are the first five terms of a number sequence.-6        -10        -14        -18        -22Write an expression, in terms of *n*, for the *n*th term of this sequence.        ………………………… | **(2)** |
| **2.****F** | The *n*th term of a sequence is 5*n*2 + 8Find the 10th term of this sequence. ………………………… | **(2)** |
| **3.****M** | A sequence t1, t2, t3, ... satisfies tn + 1 = 3tn − 1Given that t1 = 9,Find the value of t2 and the value of t3,t2 = ………………… t3 = ………………… | **(2)** |
| **4.****M** | A sequence of numbers a1, a2, a3... is defined by an + 1 = 4an − 7,     Given that a2 = 5,Find the value of a1*a*1 = ………………… | **(2)** |
| **5.****M** | Here are the first four terms of a **quadratic** number sequence. 0 5 12 21Write an expression, in terms of *n*, for the *n*th term of this sequence.        ………………………… | **(2)** |
|  |  | **(10)** |
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