**Year 9 Enhanced: Assessment 2 Revision**

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|  | Topic 1: Circles and Pythagoras | **Mark** |
| 1. | The diagram shows a ‘No Entry’ sign which has a radius of 35 cm.  If the white rectangle measures 60 cm by 10 cm,  Find the area of the sign that is shaded.  ………………………… | **3** |
| 2. | BC is the diameter of the circle.  Calculate the percentage of the area of the rectangle that is shaded.  Give your answer to 1 d.p.  ………………………… | **3** |
| 3. | Calculate the perimeter of this semi-circle.  ………………………… | **3** |
| 4. | Triangles ABD and BCD are right angled triangles.  Work out the value of x.  Give your answer correct to 3 significant figures.  ………………………… | **3** |
| 5. | A radar beam sent out by an aeroplane reaches a distance of 120km and covers an angle of 150 o .  Calculate the area covered by the beam.  ………………………… | **3** |

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|  | Topic 2: Ratio | **Mark** |
| 1. | Jessica has a wooden beam with a length of 2.7 cm and a mass of 9.9 kg  Another wooden beam has a length of 30 cm.  Work out the mass of this piece of wood.  ………………… | **3** |
| 2. | The solid cuboid is made of plastic.  The plastic has a density of 0.8 grams per cm3.  Work out the mass of the cuboid.  ………………… | **4** |
| 3. | The time, T seconds, it takes a water heater to boil some water is directly proportional to the mass of the water, m kg, in the water heater.  When *m =* 250, *T =* 600  Find T when *m =* 400  ………………… | **3** |
| 4. | The shutter speed, *S*, of a camera varies inversely as the square of the aperture  setting, *f*. When *f* = 8, *S* = 125  (a) Find a formula for *S* in terms of *f*.  .........................  (b) Hence, or otherwise, calculate the value of *S* when *f* = 4  *S* = ..................... | **3**  **2** |
|  | Topic 3: Sequences | **Mark** |
| 1. | Here is a linear sequence 5, 8, 11, 14, 17 …  Explain why 52 is not in the sequence. | **2** |
| 2. | Find the nth term of this sequence:  -2, -6 , -10 , ….  ………………… | **2** |
| 3. | Find the 5th term in the sequence (3n)2 + 4  ………………… | **2** |
| 4. | a) Calculate the common ratio of the geometric sequence:  16, 24, 36, 54 , …  …………………  b) Calculate the 8th term  ………………… | **2**  **1** |
| 5. | Calculate the nth term of the quadratic sequence:  3 10 19 30 43 …  ………………… | **3** |
| 6. | A sequence b1, b2, b3, ... is given by the rule  bn + 1 = 2bn + 3  Given that b1 = 6, find the value of b3 and the value of b4,  b3 = ………………… b4 = ………………… | **3** |