**Year 11 Enhanced Standard: Assessment 4 Review Homework**

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| **Topic 1** | **/25** | **Topic 2** | **/25** | **Topic 3** | **/20** | **Topic 4** | **/20** |

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|  | **Topic 1: Equations and Rearranging** | **Mark** |
| **1.** | Becky has some marbles.  Chris has three times as many marbles as Becky.  Dan has six less marbles than Chris.  They have a total of 50 marbles.  How many marbles do they each have? | **3** |
| **2.** | ***0****ABCD* is a rectangle.  *EFGH* is a trapezium.  ***x − 1***  ***7x − 13***  ***3x 000***  ***4x − 1***  All measurements are in centimetres.  The perimeters of these two shapes are the same.  Work out the area of the rectangle. | **4** |
| **3.** | Solve | **4** |
| **4.** | Make *q* the subject of the formula | **2** |
| **5.** | Make *x* the subject of | **3** |
| **6.** | Make *m* the subject of | **3** |
| **7.** | This shape is a solid prism.  The cross section of the prism is a trapezium.    ***x − 3***  ***11x + 5***  Find an expression for the volume of the prism. | **3** |
| **8.** | Prove that (5n – 3)2 – 3(3 – 10n) is always a multiple of 5. | **3** |
|  | **TOTAL** | **25** |

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|  | **Topic 2: Surface area and Volume** | **Mark** |
| **1.** | The diagram shows a large tin of pet food in the shape of a cylinder.  The large tin has a radius of 6.5 cm and a height of 11.5 cm.  A pet food company wants to make a new size of tin.  The new tin will have a radius of 7.8 cm.  It will have the same volume as the large tin. Calculate the height of the new tin.  Give your answer correct to one decimal place. | **3** |
| **2.** | A sphere has a surface area of 144π cm2.  Work out the volume of the sphere.  Give your answer correct to 3 significant figures. | **4** |
| **3.** | This right circular cone has radius 2*p* and height 5*p*.  The dimensions are in centimetres.  The volume of the cone is 22500*π* cm³.  Work out the value of *p* | **5** |
| **4.** | A sphere has radius cm.  Write down an expression for the volume of the sphere  in terms of *π* and *x*. Give your answer in its simplest form. | **4** |
| **5.** | Calculate the total surface area of this solid.  Give your answer in terms of π. | **4** |
| **6.** | A cone has a vertical height of 18 cm and a base radius of 8 cm.    A cut is made parallel to the base so that a cone of height 4.5 cm is removed.  Calculate the volume of the remaining frustum. | **5** |
|  | **TOTAL** | **25** |

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|  | **Topic 3: Simultaneous equations** | **Mark** |
| **1.** | Solve the simultaneous equations 2*x* + 3*y* = 19  3*x* − 2*y* = 9 | **3** |
| **2.** | Solve the simultaneous equations 3*x* + 7*y* = 34  4*x* + 5*y* =28 | **3** |
| **3.** | Andrew and Belle book in at the Sleepwell Hotel.  Andrew stays for three nights and has breakfast on two mornings.  His bill is £145.  Belle stays for five nights has breakfast on three mornings.  Her bill is £240.  Find the cost of one breakfast. | **4** |
| **4.** | a)     Show clearly that (3*x*  + 1) *2* ≡ 9*x2*+ 6*x* + 1    b)     Solve the simultaneous equations *y* = 3*x*  + 1 *y2*= 4*x2* − *x* + 7  You **must** show your working. | **1**  **5** |
| **5.** | Solve the simultaneous equations *x² + 2y = 1*  *y = x - 1*  You **must** show your working. | **5** |
|  | **TOTAL** | **20** |

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|  | **Topic 4: Pythgoras’ theorem and Trigonometry** | **Mark** |
| **1.** | *ABC* is a right-angled triangle.  *AB* = 8 cm,  *BC* = 11 cm.  Calculate the size of angle *C*.  Give your answer correct to 1 d.p. | **2** |
| **2.** | Work out the area of the triangle.  Give your answer correct to 2 decimal places.    32cm | **3** |
| **3.** | *ABC* is a triangle.  *ADC* is a straight line with *BD* perpendicular to *AC*.  *AB* = 7 cm.  *BC* = 12 cm.  Angle *BAD* = 65°.    Calculate the length of *AC*.  Give your answer correct to 3 significant figures. | **6** |
| **4.** | *ABCD* is a trapezium.  5.2 cm  6.4 cm  *AD* is parallel to *BC*.  Angle *C* = angle *D* = 90°.  Angle *B* = 50°.  *AD* = 6.4 cm.  *AB* = 5.2 cm.    Calculate the area of the trapezium.  Give your answer correct to one decimal place. | **5** |
| **5.** | The diagram represents a cuboid *ABCDEFGH*.  *AB* = 5 cm.  *BC* = 7 cm.  *AE* = 3 cm.  Calculate the size of angle CAG.  Give your answer correct to 1 d.p. | **4** |
|  | **TOTAL** | **20** |