**Year 11 Enhanced Standard: Assessment 4 Revision**

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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 two times as many marbles as Becky.  Dan has seven more marbles than Chris.  They have a total of 57 marbles.  Dan says,  "If I give some marbles to Becky, each of us will have the same number of marbles."  Is Dan correct?  You must show how you get your answer. | **3** |
| **2.** | *ABCD* is a rectangle.  *EFGH* is a trapezium.  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.    Find an expression for the volume of the prism. | **3** |
| **8.** | Prove algebraically that (2*n* + 1)2 − (2*n* + 1) is an even number for all positive integer values. | **3** |

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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 5.8 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 81π cm2.  Work out the volume of the sphere.  Give your answer correct to 3 significant figures. | **4** |
| **3.** | The diagram shows a solid cone.  The diameter of the base of the cone is 10*a* cm.  The height of the cone is 12*a* cm.  The total surface area of the cone is 360*π* cm2  The volume of the cone is *kπ* cm3, where *k* is an integer.  Find the value of *k*. | **6** |
| **4.** | The diagram shows a cylinder and a sphere.  The cylinder has radius *r* cm and height *h* cm.  The sphere has radius 2*r* cm.  The volume of the cylinder is equal to the volume of the sphere.  Find an expression for *h* in terms of *r*. | **3** |
| **5.** | The diagram shows a solid made from a hemisphere and a cone.  The radius of the hemisphere is 4 cm.  The radius of the base of the cone is 4 cm.  Calculate the volume of the solid.  Give your answer correct to 3 significant figures. | **4** |
| **6.** | A frustum is made by removing a small cone from a large cone as shown in the diagram.  The frustum is made from glass.   The glass has a density of 2.5 g / cm3  Work out the mass of the frustum.   Give your answer to an appropriate degree of accuracy. | **5** |

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|  | **Topic 3: Simultaneous equations** | **Mark** |
| **1.** | Solve the simultaneous equations 2*x* + 3*y* = 6  3*x* − 2*y* = 22 | **3** |
| **2.** | Solve the simultaneous equations 3*x* + 7*y* = 26  4*x* + 5*y* =13 | **3** |
| **3.** | Susie has to deliver some packages and some parcels.  The total number of packages is 4 times the number of parcels.  The total number of packages and parcels is 40  Each parcel has a weight of 1.5 kg.  The total weight of the packages and parcels is 37.6 kg.  Each of the packages has the same weight.  Work out the weight of each package. | **4** |
| **4.** | Solve the simultaneous equations *y2*= 2*x* + 29  *y* = *x* − 3  You **must** show your working. | **5** |
| **5.** | Solve the simultaneous equations *y* = *x* + 2  *y* = 3*x2*  You **must** show your working. | **5** |

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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 *A*.  Give your answer correct to 1 d.p. | **3** |
| **2.** | Work out the area of the triangle.  Give your answer correct to 2 decimal places. | **4** |
| **3.** | *AB* is parallel to *DC.*  *AD =* 9 cm,  *DC* = 3 cm.  Angle *BCD =* 35°.  Angle *ABD* = 90°.    Calculate the size of angle *BAD.* Give your answer correct to one decimal place. | **4** |
| **4.** | *ABCD* is a trapezium.  *AD* is parallel to *BC*.  Angle *C* = angle *D* = 90°.  Angle *B* = 50°.  *AD* = 5.8 cm.  *AB* = 4.3 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 length of *AG*.  Give your answer correct to 3 s.f.. | **4** |