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

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

|  |  |  |
| --- | --- | --- |
|  | **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 $\frac{x+1}{2}+\frac{2x-1}{3}=\frac{5}{6}$  | **4** |
| **4.** | Make *q* the subject of the formula   $r=\frac{2q-4}{3}$ | **2** |
| **5.** | Make *x* the subject of        $4x-3=2(x+y)$ | **3** |
| **6.** | Make *m* the subject of $g-3m=am+5$  | **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** |

|  |  |  |
| --- | --- | --- |
|  | **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* cm2The 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 / cm3Work out the mass of the frustum.  Give your answer to an appropriate degree of accuracy. | **5** |

|  |  |  |
| --- | --- | --- |
|  | **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 40Each 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* − 3You **must** show your working. | **5** |
| **5.** | Solve the simultaneous equations *y* = *x* + 2 *y* = 3*x2*You **must** show your working. | **5** |

|  |  |  |
| --- | --- | --- |
|  | **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** |