**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 $\frac{x+1}{4}+\frac{2x-1}{6}=\frac{5}{3}$  | **4** |
| **4.** | Make *q* the subject of the formula   $r=\frac{3q-7}{5}$ | **2** |
| **5.** | Make *x* the subject of        $5x-8=3(x+2y)$ | **3** |
| **6.** | Make *m* the subject of $f+4m=bm-8$  | **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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| $$Volume of Cone= \frac{πr^{2}h}{3}$$$$Curved surface area of cone=πrl$$ | *l* | $$Volume of sphere= \frac{4πr^{3}}{3}$$$$Surface area of sphere=4πr^{2}$$ |  |

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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 $\frac{3x}{2}$ cm.$$\frac{3x}{2}$$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* + 1b)     Solve the simultaneous equations *y* = 3*x*  + 1*y2*= 4*x2* − *x* + 7You **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 cm6.4 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** |