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

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| **Equations** | **/15** | **Volume S.A.** | **/15** | **Sim Eq** | **/12** | **Trigonometry** | **/13** |

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|  | **Topic 1: Equations and rearranging** | **Mark** |
| **1.** | *ABC* is a triangle. Angle *ABC* = angle *BCA*.  Work out the value of *x*.  ……………… | **3** |
| **2.** | Solve  …………………… | **3** |
| **3.** | Solve  …………………… | **3** |
| **4.** | Make *q* the subject of the formula  …………………… | **3** |
| **5.** | 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.** | Work out the volume of this cuboid. Give your answer in the form .  *3x+2*  *2*  *x - 3*  …………………… | **3** |
| **2.** | Find the volume of this triangular prism.  13 cm  5 cm  20 cm  …………………… cm³ | **3** |
| **3.** | A cone has a base radius of 5 cm and a slant height of 13 cm.  5 cm  13 cm  Calculate the volume of the cone.  Give your answer correct to 3 significant figures.  …………………… cm³ | **3** |
| **4.** | The diameter of a sphere is 10 cm.  Calculate the surface area of the sphere.  Give your answer in terms of π.  …………………… cm² | **2** |
| **5.** | The diagram shows a solid made from a hemisphere and a cylinder. The radius of the hemisphere is 3 m.  The height of the cylinder is 30 m.  Calculate the volume of the solid.  Give your answer correct to 3 significant figures.    …………………… m³ | **4** |

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|  | **Topic 3: Simultaneous equations** | **Mark** |
| **1.** | Solve the simultaneous equations. 2*x* + *y* = 15         3*x* − *y* = 20  *x* = …………………… *y* = …………………… | **2** |
| **2.** | Solve the simultaneous equations 2*x* + 3*y* = 7  3*x* − 2*y* = -9  *x* = …………………… *y* = …………………… | **3** |
| **3.** | Solve the simultaneous equations 3*x* + 2*y* = 7  5*x* + 4*y* =12  *x* = …………………… *y* = …………………… | **3** |
| **4.** | 3 kg of potatoes and 4 kg of carrots have a total cost of 440p.  4 kg of potatoes and 3 kg of carrots have a total cost of 470p.  Work out the total cost of 1 kg of potatoes and 1 kg of carrots.  £ …………………… | **4** |

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|  | **Topic 4: Trigonometry** | **Mark** |
| **1.** | *ABC* is a right-angled triangle.  Calculate the length of *AB*.  Give your answer correct to 3 significant figures.  …………………… cm | **2** |
| **2.** | Calculate the size of angle BAC.  Give your answer correct to 1 decimal place.  …………………… ° | **2** |
| **3.** | *ABCD is a trapezium.*  *AB* = 15 m  *BC* = 24 m  Angle *BAD* = 62°   1. Work out the length of BD.   Give your answer correct to 1 decimal place.  …………………… m   1. Work out the size of angle *BCD*.  Give your answer correct to 1 decimal place.   …………………… ° | **2**  **2** |
| **4.** | *ABCD* is a rectangle. *CDE* is a straight line.  *AB* = 12 cm  Angle *ACB* = 60°  Angle *EAC* = 90°  Calculate the length of *CE*.  You must show all your working.  …………………… cm | **5** |