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

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|  | **Topic 2: Surface area and volume** | **Mark** |
| **1.** | Work out the volume of this cuboid.Give your answer in the form $ax^{2}+bx+c$.*3x+2**2**x - 3*…………………… | **3** |
| **2.** | Find the volume of this triangular prism. 13 cm5 cm20 cm…………………… cm³ | **3** |
| **3.** | A cone has a base radius of 5 cm and a slant height of 13 cm.5 cm13 cmCalculate 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.…………………… m1. 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** |