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| Year  8 | | *Volume* | Non Calculator  Section |
| **Skills and Knowledge Assessed:**   * Draw different views of prisms and solids formed from combinations of prisms (ACMMG161) * Choose appropriate units of measurement for area and volume and convert from one unit to another (ACMMG195) * Develop the formulas for volumes of rectangular and triangular prisms and prisms in general. Use formulas to solve problems involving volume (ACMMG198) * Calculate the surface area and volume of cylinders and solve related problems (ACMMG217) Extension | | | Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Answer all questions in the spaces provided on this test paper by:**  ***Writing the answer in the box provided.***  **or**  ***Shading in the bubble for the correct answer from the four choices provided.***  **Show any working out on the test paper.** | | | |
|  | The top, front and side views of a solid are shown.  Which of these could be the solid? | | |
|  | A triangular prism is shown at right. Which diagram could represent the top view of this prism? | | |
|  | What is the volume of a cube with sides measuring 8 cm?  Volume = cm3 | | |
|  | A container has a volume of 100 000 cm3. How many cubic metres is this?  0.01 m3 0.1 m3 1 m3 10 m3 | | |
|  | What metric unit would a builder use to measure the volumeof concrete in a delivery by a concrete truck?  ` cubic centimetres cubic metres  cubic millimetres tonnes | | |
|  | What is the volume of the rectangular prism shown?  Volume = m3 | | |
|  | The solid shown is built using cubes with 6 cm edges. What is the volume of the solid?  36 cm3 216 cm3  1 728 cm3 1 944 cm3 | | |
|  | A fish tank has the dimensions shown.  When it is partially filled with 45 000 cm3 of water, the depth of water is *d* cm.  What is the value of *d*?  *d* = | | |
|  | Draw a three dimensional sketch of the prism whose net is shown below. | | |
|  | What is the volume of the cube whose net is shown here?  Volume = cm3 | | |
|  | What is the volume of the triangular prism shown?  240 cm3  260 cm3  390 cm3  520 cm3 | | |
|  | A vase has a base in the shape of a hexagon which has an area of 94 cm2.  The sides are rectangles which measure 6 cm by 11 cm and are perpendicular to the base.  Calculate the volume of the vase.  Volume = cm3 | | |
|  | A cylinder has a circular base with radius 6 cm and a perpendicular height of 10 cm.  Which expression would give its volume?  36π cm3  180π cm3  360π cm3  720π cm3 | | |
|  | One cubic centimetre holds one millilitre of water. How many litres of water would be held by a container which has a volume of 2 600 cm3?  0.26 litres 2.6 litres 26 litres 260 litres | | |
|  | A volume of one cubic metre holds 1 kilolitre of water.  The water tank shown is in the shape of a rectangular prism.  How many litres of water would it hold?  litres. | | |

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| Year  8 | | *Volume* | Calculator Allowed  Short Answer  Section |
|  | | | Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Answer all questions in the spaces provided on this test paper by:**  ***Writing the answer in the box provided.***  **or**  ***Shading in the bubble for the correct answer from the four choices provided.***  **Show any working out on the test paper. Calculators are allowed.** | | | |
|  | Which of the solids shown below is a prism? | | |
|  | An octagonal prism is shown below.  *A* = the area of the octagon.  *l* = the length of the prism  *s* = the side length of the octagon.  Which formula could be used to find its volume (*V*)?  . . . . | | |
|  | A cube has a volume of 3 500 **mm3**. What is its volume in **cm3**?  3.5 cm3 35 cm3  350 cm3 35 000 cm3 | | |
|  | What is the volume of the prism shown?  Volume = mm3 | | |
|  | Calculate the volume of this prism, giving your answer in cubic metres.  Volume = cubic metres. | | |
|  | A right triangular prism is shown below.  Calculate its volume.  Volume = cm3 | | |
|  | What is the volume of the triangular prism shown?  720 cm3  1 440 cm3  1 530 cm3  1 632 cm3 | | |
|  | The prism shown has a parallelogram as its front face.  What is the volume of the prism?  18 000 cm3  20 160 cm3  21 000 cm3  37 800 cm3 | | |
|  | The prism has an irregular pentagon which has an area of 3 m2, as its front face.  The length of the prism is 80 cm.  Calculate the volume of the prism in m3.  Volume = m3. | | |
|  | Find the volume of cylinder to the nearest 10 cm3.  Volume = cm3 | | |
|  | A can of peaches is a cylinder with diameter 7.2 cm and depth 9 cm.  What is the volume of the can to the nearest 10 cm3?  65 cm3  200 cm3  370 cm3  1 470 cm3 | | |
|  | A storage hut is in the shape of a half cylinder.  The diameter of the semicircle is 8 metres and the length of the hut is 16 metres.  What volume does the hut hold?  Volume = m3 | | |
|  | A ramp for access to a hall is in the shape of a right triangular prism and is made entirely of concrete.  What volume of concrete is needed to make the ramp?  Volume of concrete = m3. | | |
|  | For a play, a large star is required as a prop. The star is made of papier mache and has an area 65 00 cm2 and is 0.2 m thick. What volume of papier mache is needed for the star?  The volume of papier mache is cm3. | | |
|  | A storage cabinet is in the shape shown.  What volume of storage does the cabinet provide?  Storage Volume = m3. | | |

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| Year  8 | *Volume* |

ANSWERS

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| Non Calculator Section |

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|  | The second one |
|  | The last one. |
|  | 512 cm3 |
|  | 0.1 m3 |
|  | cubic metres |
|  | 480 m3 |
|  | 1 728 cm3 |
|  | 30 cm |
|  |  |
|  | 125 cm3 |
|  | 240 cm3 |
|  | 1034 cm3 |
|  | 360π cm3 |
|  | 2.6 litres |
|  | 12 000 L or 12kL |

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| Calculator Allowed Section |

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|  | The last one |
|  |  |
|  | 3.5 cm3 |
|  | 48 000 mm3 |
|  | 1.35 cubic metres. |
|  | 6 480 cm3 |
|  | 1 440 cm3 |
|  | 18 000 cm3 |
|  | 2.4 m3 |
|  | 9 850 cm3 |
|  | 370 cm3 |
|  | 402 m3 |
|  | 3.24 m3 |
|  | 130 000 cm3 |
|  | 4.3 m3 |