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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.Calculators are **not** allowed. | | | |
|  | Which diagram shows the three dimensional view of the solid whose plan and elevations are shown below. | | |
|  | Which solid below could be described as a prism? | | |
|  | What is the volume of the cube shown? | | |
|  | What is the volume of the rectangular prism? | | |
|  | The solid is made by joining centimetre cubes together.  What is the volume of the solid? | | |
|  | How many cubic centimetres are there in a cubic metre?  1 000  10 000  100 000  1 000 000 | | |
|  | What is the volume of the prism shown in cm3?  18 cm3  180 cm3  1 800 cm3  18 000 cm3 | | |
|  | Find the volume of the triangular prism shown. | | |
|  | What is the volume of the triangular prism shown?  1 360 m3  2 400 m3  2 720 m3  4 800 m3 | | |
|  | The area of the heptagonal base of this prism is 25 cm2.  What is the volume of the prism? | | |
|  | What is the volume of the cylinder, in terms of | | |
|  | What is the volume of the prism whose net is shown here? | | |
|  | What volume of paint would the cylindrical can hold.  Answer in cm3 and in terms of | | |
|  | A barn has the dimensions shown.  Calculate the volume of the barn in cubic metres. | | |
|  | A food package is in the form of a trapezoidal prism.  The dimensions are shown.  Find the volume of the package. | | |

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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 this test paper. Calculators are allowed. | | | |
|  | What name could be given to the solid below?  Hexagonal prism  Hexagonal pyramid  Pentagonal prism.  Pentagonal pyramid. | | |
|  | What name would be given to a solid whose net is shown below? | | |
|  | A cube has a volume of 17.576 cm3?  What is its side length?  2.6 cm  4.2 cm  5.8 cm  8.8 cm | | |
|  | What is the volume of the rectangular prism? | | |
|  | Find the volume of the triangular prism shown. | | |
|  | A water trough is in the shape of a trapezoidal prism.  It is 35 cm deep and 165 cm long.  What is its volume, correct to the nearest cm3?  186 450 cm3  404 250 cm3  606 375cm3  808 500 cm3 | | |
|  | The prism has a rhombus as its base.  What is its volume?  30 cm3  90 cm3  180 cm3  360 cm3 | | |
|  | An eraser is in the shape of a prism with a parallelogram as its cross section.  What is the volume of the eraser in mm3? | | |
|  | A paperweight is a prism with a face in the shape of a kite, as shown.  It is 3 cm thick and made of glass.  What volume of glass is used to make the paperweight? | | |
|  | What is the volume of the solid shown?  161 cm3  966 cm3  1 932 cm3  2 112 cm3 | | |
|  | What is the volume of the cylinder to the nearest cm3?  707 cm3  2 651 cm3  5 301 cm3  10 603 cm3 | | |
|  | The diagram shows a picnic hamper.  Find the volume of the hamper?  18 550 cm3  24 850 cm3  30 800 cm3  37 100 cm3 | | |
|  | A storage hut is in the shape of a half cylinder.  The diameter of the semicircle is 10 metres and the length of the hut is 15 metres.  What is its volume to the nearest cubic metre? | | |
|  | Jack is building a prism from 1 cm2 cubes. What is the least number of cubes he must add to produce a prism? | | |
|  | A cylindrical water cooler is 66 cm high and has a diameter of 46 cm.  It is currently half full, and is used to fill cups that hold 400 ml.  Given that 1000 cm3 holds 1 litre, how many more cups could be filled from the cooler? | | |

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| Year 8 | | *Volume* | Non Calculator  Section |
| ANSWERS | | | |
| No. | WORKING | | ANSWER |
|  | 1st has pyramid above a prism | | 1st answer |
|  | 3rd is a triangular prism | | 3rd answer |
|  |  | | 27 cm3 |
|  |  | | 160 cm3 |
|  | Bottom row = 10 cm3  Second row = 5 cm3  Top row = 3 cm3  Total volume = 18 cm3 | | 18 cm3 |
|  |  | | 4th answer |
|  |  | | 2nd answer |
|  |  | | 192 m3 |
|  |  | | 1st answer |
|  |  | | 200 cm3 |
|  |  | | 2nd answer |
|  |  | | 480 cm3 |
|  |  | | cm3 |
|  |  | | 336 m3 |
|  |  | | 3 600 cm3 |

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| Year 8 | | *Volume* | Calculator Allowed  Short Answer  Section | |
| ANSWERS | | | | |
| No. | WORKING | | | ANSWER |
|  | It is a Pentagonal prism. | | | 3rd answer |
|  | Hexagonal prism | | | Hexagonal prism |
|  |  | | | 1st answer |
|  |  | | | 1 280 cm3 |
|  |  | | | 480 m3 |
|  |  | | | 2nd answer |
|  |  | | | 4th answer |
|  |  | | | 180 000 mm3 |
|  |  | | | 324 cm3 |
|  |  | | | 3rd answer |
|  |  | | | 2nd answer |
|  |  | | | 1st answer |
|  |  | | | 589 m3 |
|  | Extra needed 5 on second row and 4 on top row to make a prism.  Total needed = 9 cubes. | | | 9 cubes |
|  |  | | | 137 cups |