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| Year  8 | Mathematics Test    Volume of Prisms and Cylinders | **Calculator Test** |
|  | Name |  |

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| **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.** | |
| 1. | A pentagonal prism is shown below.  *A* = the area of the pentagon.  *l* = the length of the prism  *s* = the side length of the pentagon.  Which formula could be used to find its volume (*V*)?        . |
| 2. | For the solid shown, which diagram below correctly shows its front view (elevation) and top view (plan). |
| 3. | Draw a three dimensional sketch of the prism whose net is shown below. |
| 4. | Find the volume of a cube whose sides measure 15 cm.  Volume = cm3 |
| 5. | Which calculation would give the volume of the prism shown. |
| 6. | What is the volume of the prism shown?  Volume = mm3 |
| 7. | What is the volume of the prism shown in cm3?  52.2 cm3  522 cm3  5 220 cm3  52 200 cm3 |
| 8. | A prism has a volume of 4 m3. What is its volume in cm3?  400 cm3  40 000 cm3 400 000 cm3 4 000 000 cm3 |
| 9. | Jack is building a rectangular prism from 1 cm2 cubes. What is the least number of cubes he must add to produce a rectangular prism?  4  7  14  16 |
| 10. | Which calculation could be used to find the volume of the triangular prism shown? |
| 11. | Find the volume of the triangular prism shown.  Volume = m3 |
| 12. | Find the volume of the prism shown.  Volume = cm3 |
| 13. | The fuel tank in a car has the dimensions shown below.  Using the relationship: 1 cubic centimetre holds 1 millilitre; find the capacity of the tank in litres.  Capacity = litres |
| 14. | Which calculation could be used to find the volume of this cylinder? |
| 15. | Find the volume of cylinder to the nearest mm3.  Volume = mm3 |
| 16. | A paint tin in Jerry’s shed has lost its label.  He opens it and finds it is full of red paint.  Using the measurements that Jerry took; find how much paint the tin holds (to the nearest litre).  1 cm3 holds 1 ml of paint.  Capacity = litres |
| 17. | Find the volume of the storage shed shown which has a semicircular cross section.  Volume = m3 |
| 18. | A food package is in the form of a trapezoidal prism.  The dimensions are shown.  Find the volume of the package.  Volume = cm3 |
| 19. | A trough for horses has a cross section that is made up of a rectangle and a semicircle as shown.  The trough is 4 metres long.  How much water does the trough hold?  1 000 cm3 holds 1 litre.  Capacity = litres. |
| 20. | The diagram shows a building in a park, commonly used for picnics.  Find the volume of the building?  Volume = m3 |

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| **Section 2**  Longer Answer Calculator Section | | |  |
| Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | Write all working and answers in the spaces provided on this test paper.  Calculators are allowed for this section. | | |
| 1. | (a)  2 marks | Kyle is loading a delivery of timber. There are posts and rafters in the load; their dimensions are shown in the diagram.   1. Find the volume of one post (in cubic centimetres).   …………………………………………………………………  …………………………………………………………………   1. Find the volume of one rafter (in cubic centimetres).   …………………………………………………………………  ………………………………………………………………… | |
| (b)  2 marks | There are 8 posts and 15 rafters in the load.  What is the total volume of timber in the load (in cm3)?  …………………………………………………………………  ………………………………………………………………… | |
| (c)  2 marks | 1 000 cm3 has a mass of 0.5 kg.  What is the mass of the load?  …………………………………………………………………  ………………………………………………………………… | |

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| 2. | For the solid shown, which diagram below correctly shows its front view (elevation) and top view (plan). |
| 3. | Draw a three dimensional sketch of the prism whose net is shown below. |
| 4. | Find the volume of a cube whose sides measure 15 cm.    Volume = cm3 |
| 5. | Which calculation would give the volume of the prism shown. |
| 6. | What is the volume of the prism shown?    Volume = mm3 |
| 7. | What is the volume of the prism shown in cm3?  52.2 cm3  522 cm3  5 220 cm3  52 200 cm3 |
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| (b)  2 marks | There are 8 posts and 15 rafters in the load.  What is the total volume of timber in the load (in cm3)? | |
| (c)  2 marks | 1 000 cm3 has a mass of 0.5 kg.  What is the mass of the load? | |