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| Year  9 | | Mathematics Test  Volume and Surface Area of Prisms and Cylinders | | Calculator Allowed |
| Short Answer Section | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
|  | Write all working and answers in the spaces provided on this test paper. | | | |
| 1. | A 1 kg packet of oats and the carton which holds 12 of the packets are shown.  What is the volume (to the nearest cm3) of the carton?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 2. | Another brand of oats is delivered to the supermarkets in the larger carton shown.  What is the surface area of this carton?  ………………………………………………….  …………………………………………………..  .............................................................................    ............................................................................. | | | |
| 3. | What is the volume of the triangular prism shown?  .............................................................................    .............................................................................  .............................................................................    ............................................................................. | | | |  |
| 4. | Find the surface area of the triangular prism shown.  .............................................................................    .............................................................................  .............................................................................    ............................................................................. | | | |
| 5. | What is the volume of the trapeziodal prism shown?  .............................................................................    .............................................................................  .............................................................................    ............................................................................. | | | |
| 6. | The prism shown has a rhombus as its cross section.  Find the surface area of the prism.  .............................................................................    .............................................................................  .............................................................................    ............................................................................. | | | |
| 7. | What is the volume of the cylinder shown?  .............................................................................    .............................................................................  .............................................................................    ............................................................................. | | | |
| 8. | Find the surface area of the cylinder.  .............................................................................    .............................................................................  .............................................................................    ............................................................................. | | | |
| 9. | What is the volume of the prism shown?  .............................................................................  .............................................................................    .............................................................................  .............................................................................    ............................................................................. | | | |
| 10. | A cylinder has been cut in half to give this solid.  Find its surface area.  .............................................................................    .............................................................................  .............................................................................    .............................................................................  .............................................................................    ............................................................................. | | | |

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| Year  9 | | Mathematics Test  Volume and Surface Area of Prisms and Cylinders | | Calculator Allowed |
| Multiple Choice Section | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
|  | Mark all your answers on the accompanying multiple choice answer sheet, not on this test paper. You may do any working out on this test paper. Calculators are allowed for this section. | | | |
| 1. | Each wooden block in a child’s set of building blocks is a square prism with the dimensions shown.  The set has 25 blocks.  What is the total volume of wood in the set of blocks?    A. 192 cm3 B. 224 cm3 C. 4 800 cm3 D. 5 600 cm3 | | | |
| 2. | A footrest is a cube with edges 0.6 m.  The cube is covered with material on all faces.  What area of material is needed for the footrest?  A. 0.108 m2 B. 0.216 m2 C. 1.08 m2 D. 2.16 m2 | | | |
| 3. | The Williams family’s swimming pool has an irregular shape but a constant depth of 1.5 metres.  Mr Williams calculates the area of the floor of the pool to be 60m2.  How many kilolitres of water does the pool hold? (Each m3 holds one kilolitre.)  A. 40 kL B. 90 kL C. 135 Kl D. 5 400 kL | | | |
| 4. | A cube has a volume of 125 million cubic centimetres.  How many cubic metres is this?  A. 125 000 B. 12 500 C. 1 250 D. 125 | | | |
| 5. | The attic space in the Kilby house is to be converted into a room.  The new room has a triangular cross section, as shown, and is 8 metres long.  What is the volume of the new room?  A. 62 m3 B. 69.6 m2 C. 124 m2 D. 248 m2 | | | |
| 6. | A storm water channel has a trapezoidal cross section and is 20 m long.  What volume of water could it hold?  A. 67.5 m3 B. 135 m3 C. 270 m3 D. 583.2 m3 | | | |
| 7. | A cylindrical water tank has the dimensions shown. What is the volume of the tank to the nearest cubic metre?  A. 23 m3  B. 36 m3  C. 43 m3  D. 174 m3 | | | |
| 8. | A mini greenhouse is in the shape of a triangular prism.  It has plastic film on all faces except the floor.  What area of plastic is needed for the greenhouse?  A. 15 360 cm2 B. 17 520 cm2  C. 19 680 cm2 D. 23 520 cm2 | | | |
| 9. | A cylindrical pipe is installed as part of a skate park.  The outside curved surface only is to be painted.  The chosen paint covers 20 litres per can.  How many cans are needed to paint the outside of the pipe?  A. 3 B. 4 C. 5 D. 6 | | | |
| 10. | A machinery shed is in the shape shown and is clad with sheet metal.  It is open at one end and has an earth floor.  What area of sheet metal is needed to clad the shed?  A. 23.7 m2  B. 33.3 m2  C. 38.4 m2  D. 44.8 m2 | | | |

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| Year  9 | Mathematics Test  Volume and Surface Area of Prisms and Cylinders | |
| Multiple Choice  Answer Sheet | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Completely fill the response oval representing the most correct answer.

1. A B C D

2. A B C D

3. A B C D

4. A B C D

5. A B C D

6. A B C D

7. A B C D

8. A B C D

9. A B C D

10. A B C D

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|  | Mathematics Test  Volume and Surface Area of Prisms and Cylinders |
| Answer Sheet |

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| Short Answer | |
| 1 | 32 760 cm3 |
| 2 | 3.76 m2 |
| 3 | 6.4 m3 |
| 4 | 336 m2 |
| 5 | 13 800 cm3 |
| 6 | 3.48 m2 |
| 7 | 942.5 cm3 |
| 8 | 226.2 cm2 |
| 9 | 39.48 m3 |
| 10 | 1 038.6 cm2 |

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| --- | --- |
| Multiple Choice | |
| 1 | C |
| 2 | D |
| 3 | B |
| 4 | D |
| 5 | A |
| 6 | B |
| 7 | C |
| 8 | C |
| 9 | A |
| 10 | D |

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| Longer Answer | | |
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