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| *School Name*  *Mathematics Test 2017* | | | |
| Year 9 | | *Area of Plane Shapes* | Non Calculator |
| **Skills and Knowledge Assessed:**   * Find perimeters and areas of parallelograms, trapeziums, rhombuses and kites (ACMMG196) * Investigate the relationship between features of circles such as circumference, area, radius and diameter. Use formulas to solve problems involving circumference and area (ACMMG197) * Choose appropriate units of measurement for area and volume and convert from one unit to another (ACMMG195) * Calculate the areas of composite shapes (ACMMG216) | | | Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Section 1** Short Answer Section | | | |
| Write all working and answers in the spaces provided on this test paper.  DIAGRAMS ARE NOT TO SCALE UNLESS OTHERWHISE STATED. | | | |
|  | Calculate the area of this rectangle.  ……………………………………………....  ………………………………………………  ………………………………………………. | | |
|  | What is the area of a square with sides 20 cm long?  ……………………………………………………………………………………………....  ………………………………………………………………………………………………. | | |
|  | How many square metres are there in a square kilometre?  ……………………………………………………………………………………………....  ………………………………………………………………………………………………. | | |
|  | Find the area of the triangle shown.  ……………………………………………....  ………………………………………………  ………………………………………………. | | |
|  | What is the area of this shape?  ……………………………………………....  ……………………………………………....  ………………………………………………  ………………………………………………. | | |
|  | What is the area of the parallelogram shown?  ………………………………………………  ……………………………………………....  ……………………………………………… | | |
|  | What is the area of this rhombus?  ………………………………………………  ……………………………………………....  ……………………………………………… | | |
|  | A trapezium has the dimensions shown.  What is its area?  ………………………………………………  ……………………………………………....  ……………………………………………… | | |
|  | What is the area of this shape?  ………………………………………………  ……………………………………………....  ……………………………………………… | | |
|  | What is the area of this circle?  (Use .)  ………………………………………………  ……………………………………………....  ……………………………………………… | | |
|  | What is the area of this shape?  ………………………………………………  ………………………………………………  ……………………………………………....  ……………………………………………… | | |
|  | What is the area of this polygon?  ………………………………………………  ………………………………………………  ……………………………………………....  ……………………………………………… | | |
|  | What is the area of this sector of a circle in terms of  ?    ………………………………………………  ………………………………………………  ……………………………………………....  ……………………………………………… | | |
|  | What is the shaded area in this diagram?  ………………………………………………  ………………………………………………  ……………………………………………....  ……………………………………………… | | |
|  | This shape is made up of two semicircles,  What is its area?  ………………………………………………  ………………………………………………  ……………………………………………....  ………………………………………………  ………………………………………………. | | |

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| *School Name*  *Mathematics Test 2017* | | | |
| Year 9 | | *Area of Plane Shapes* | Calculator Allowed |
| Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Section 2** Multiple Choice Section | | | |
| 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. | | | |
|  | What is the area of this rectangle?  A. 14.5 m2  B. 25.5 m2  C. 29.0 m2  D. 51.0 m2 | | |
|  | A shaded polygon is shown on a 1 cm grid background.  What is the area of the polygon?  A. 12.5 cm2  B. 13.0 cm2  C. 13.5 cm2  D. 14.5 cm2 | | |
|  | Which unit would be best to describe the area of a normal classroom?  A. hectares  B. square centimetres  C. square metres  D. square kilometres | | |
|  | Which shape has an area of 225 cm2 ?    A. B.  C. D. | | |
|  | Which calculation could not be used to find the area of this triangle?    A.  B.  C.  D. | | |
|  | What is the area of the rhombus shown?  A. 840 cm2  B. 1160 cm2  C. 1189 cm2  D. 1680 cm2 | | |
|  | *ABCD* is a parallelogram.  What is its area in square metres?  A. 9.24 m2  B. 10.725 m2  C. 18.48 m2  D. 21.45 m2 | | |
|  | Taylah builds a kite with the dimensions shown.  What area of fabric is needed for the kite?  A. 5219.5 cm2  B. 6570 cm2  C. 7865 cm2  D. 9900 cm2 | | |
|  | What is the area of the trapezium shown?    A. 660 cm2  B. 972 cm2  C. 996 cm2  D. 1944 cm2 | | |
|  | What is the area of the semicircle shown (in terms of  )?    A.  B.  C.  D. | | |
|  | The wall of a house is in the shape of a pentagon, as shown.  Calculate the area of the wall.  A. 18.765 m2  B. 25.2 m2  C. 42.21 m2  D. 50.4 m2 | | |
|  | The base of this triangle is three times the vertical height of the triangle.  The area of the triangle is 294 cm2.  What is the vertical height?  A. 7 cm  B. 14 cm  C. 16 cm  D. 18 cm | | |
|  | What is the area of the sector of a circle shown?  A. 3.4 m2  B. 12.1 m2  C. 13.6 m2  D. 18.1 m2 | | |
|  | The wall shown, which is in the shape of a trapezium, is to be painted.  It has a square window in the middle, whose diagonals measure 1.6 m.  What is the area to be painted?  A. 9.28 m2  B. 11.84 m2  C. 13.12 m2  D. 19.84 m2 | | |
|  | Find the area of the shape shown to the nearest 100th of a square metre.    A. 72.55 cm2  B. 80.55 cm2  C. 92.55 cm2  D. 104.55 cm2 | | |

*School Name*

*Mathematics 2017*

*Multiple Choice Answer Sheet*

*Area of Plane Shapes*

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

11. A B C D

12. A B C D

13. A B C D

14. A B C D

15. A B C D

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| *School Name*  *Mathematics Test 2017* | | |
| Year 9 | *Area of Plane Shapes* | Non Calculator Section |

ANSWERS

| Question | Working and Answer |
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|  | Can also be broken into rectangle and trapezium. |
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|  | Larger semicircle has radius 10 cm and the smaller has radius 5 cm |

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| *School Name*  *Mathematics Test 2017* | | |
| Year 9 | *Area of Plane Shapes* | Calculator Allowed  Multiple Choice  Section |

ANSWERS

|  |  |  |
| --- | --- | --- |
| Question | Working | M C Answer |
|  |  | **D** |
|  | 9 complete square cm.  3.5 cm2 of part squares.  Area = 12.5 cm2 | **A** |
|  | Hectares and square kilometres are too large a units and square centimetres is too small a unit, so the best is square metres. | **C** |
|  |  | **B** |
|  |  | **B** |
|  |  | **A** |
|  |  | **C** |
|  |  | **D** |
|  |  | **B** |
|  |  | **A** |
|  |  | **C** |
|  | Or can be done by trial and error with the  options given. | **B** |
|  |  | **C** |
|  |  | **A** |
|  |  | **D** |

*School Name*

*Mathematics 2017*

*Multiple Choice Answer Sheet*

*Area of Plane Shapes*

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

11. A B C D

12. A B C D

13. A B C D

14. A B C D

15. A B C D