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| **Surface Area and Volume: 23 marks** |
| 1. Find the value of given that the  perimeter of the shape is cm.    A. 2 B. 3  C. 5 D. 7 | 3. A smaller cube is placed on top of a larger  cube as shown in the figure below.    Given that the areas of one face of the large  cube and the small cube are equal to  and respectively, find the surface area  of the solid in square centimetres.  A. B.  C. D. |
| 2. Find the shaded area of the figure below. | 4. A swimming pool has a length of m and a  width of m. The depth of the pool is m at  one end and m at the other end, as  shown in the diagram.    What is the volume of this pool? |
| 5. The four walls of a rectangular room,  represented below, is to be painted.    a) Find the total area to be painted.  b) If a can of paint covers 7 find the  number of cans of paint needed to  paint the room with two coats. | 6. A shape consisting of a quadrant and a  right-angled triangle is shown below.    What is the perimeter of this shape, correct to one decimal place? |
| 7. Find the length of the side of a cube which  has the same volume as the triangular  prism shown below. Answer correct to one  decimal places |
| 8. The solid shown below is made of a closed  cylinder and a hemisphere (half of a  sphere).    What is the total surface area of the solid, if the surface area of the hemisphere is  Answer correct to one decimal place. | b) What is the capacity of the tank, to the  nearest litre?  c) During a thunderstorm of rain falls  onto a roof with an area of and is  then collected in the water tank.  By how much does the water level in the  tank rise, correct to one decimal place? |
| 9. The base of a water tank is in the shape of a  square with semi-circles on each side of the  square. The side length of the square is m  and the height of the water tank is m.    a) Find the area of the base of the water tank.  Answer correct to one decimal place. |
| **Coordinate Geometry : 30 marks** |
| 1. A point on the number plane is 4 units to  the left and 2 units up from the origin.  What are the co-ordinates of this point?  A.  B.  C.  D. | 4. a) Complete the table of values below for  the equation .   |  |  |  |  | | --- | --- | --- | --- | |  | 0 | 1 | 2 | |  |  |  |  |   b) Graph the equation on the number plane  below.    c) The points and lie on  the line .    Using **Pythagoras’ theorem,** find the  distance from P to Q. Leave your answer in  exact form. |
| 2. The graph shows a line which has an  equation of the form    Which of the following statements is true?  A. is positive and is negative  B. is negative and is positive  C. and are both negative  D. and are both positive |
| 3. Which of the following statements about  the line *y* = 4 is not true?  A. The gradient is zero.  B The *y*-intercept is at (0, 4).  C The graph is parallel to the *x*-axis.  D The point (4, 2) lies on this graph. |
| 6. Consider the graph below:    a) What is the gradient of the line?    b) What is the y-intercept?  c) What is the equation of the line?  Answer in gradient- intercept form. | 8. A line passes through the points  and .  a) Calculate the distance between the two  points, correct to one decimal place.  b) Find the slope of the line. |
| 7. Find the gradient and *y*- intercept of the  line with equation:  a)      b) | 9. is the midpoint of the line  segment If the coordinates of are  , find the coordinates of |
| 10. Consider the line  a) Find the - intercept of the line.  b) Find the - intercept of the line.  c) Graph the line on the  number plane below. Mark clearly the  intercepts on your graph. | 11. Does the point lie on the line  ? Justify your answer with  appropriate working.  12. Solve the equation  **graphically.** Show full working. |
| **Problem Solving: 2 marks** |
| 1. The shaded segment in the circle below,  centre O, has an area of .    Find the radius of the circle. | 2. A circle has a centre of and passes  through . The circle passes through all  of the following points **EXCEPT:**  A.  B.  C.  D. |

**THE END**