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| **Linear Relationships (21 marks)** |
| 1. A formula for determining the gradient of a  line is given below.    What is the slope of the line that passes  through the points and  A. B.  C. D. | 4. Consider the line represented by the  equation A new line is formed  by decreasing the slope and increasing the  *y*-intercept.  Which of the following could be the graph  of the new line?  A.    B.      C.    D. |
| 2. Show that the point lies on the line |
| 3. Find the equation of the line drawn below. |
| 5. Line *RS* has a gradient of . Find the  equation of the line parallel to *RS*, that  passes through the point .  Write your answer in:  a) gradient-intercept form    b) general form | 7. The diagram below shows the points  and .    a) Find the length of the interval *AB.*  Leave your answer in surd form.  b) Find the midpoint of the line *AB.*    c) The line is perpendicular to the x-axis and  passes through the point B.  Write the equation of the line |
| 6. Consider the line  a) What is the gradient?  b) What is the y-intercept?  c) What is the x- intercept?  c) Graph the linear equation  showing clearly the x and y intercepts? |
| **Surface Area : 21 marks** |
| 1. Find the shaded area of the following shape.  The two identical squares have a side length  of cm.      A. B.  C. D. | 4. Find, correct to one decimal place, the area  of the sector below. |
| 2. Calculate the volume of the following solid.    A. B.  C. D.  3. What is the surface area of the open box  below?    A. B.  C. D. | 5. Find the surface area of the triangular prism  below. |
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| 6. A shade shelter is to be constructed in the  shape of half a cylinder with open ends. The  diameter is 3.8 m and the length is 10 m.    The curved roof is to be made of plastic  sheeting. What area of plastic sheeting is  required, to the nearest ? | 8. a) Calculate the area of the cross-section for  the solid drawn below.    b) Hence, or otherwise, calculate the volume  of the solid. |
| 7. Find the surface area of the solid below.    A. B.  C. D. |  |
| 9. A clay brick is made in the shape of a  rectangular prism with dimensions as shown  below.    a) Calculate the volume of the clay brick.  Three identical cylindrical holes are made  through the brick as shown. Each hole  has a radius of 1.4 cm    b) Calculate the volume of one of the cylindrical  hole, to one decimal place.  c) What is the volume of clay remaining in the  brick after the holes have been made, to one  decimal place? | 10. A skip bin is in the shape of a trapezoidal  prism, with dimensions as shown.    a) What is the volume of the skip bin?  b) Calculate its capacity in kL, correct to one  decimal place. |
| **Literacy : 9 marks**  Use words from the list below to complete the following sentences.  ***upwards edges parallel downwards***  ***intercept faces positive surface***  ***volume gradient capacity vertices***  ***negative cross-section perpendicular***  a) A line sloping \_\_\_\_\_\_\_\_\_\_\_\_ has a positive  rise and a \_\_\_\_\_\_\_\_\_\_\_\_\_ gradient.  b) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ lines have the same  gradient.  c) The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a line is where the  line cuts the axis.  d) The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a line is the slope  of the line.  e) The surface area of a solid is the total area of  all the \_\_\_\_\_\_\_\_\_\_\_\_ of the solid  f) A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a solid is a ‘slice’  of the solid cut across it, parallel to its end  faces.  g) The \_\_\_\_\_\_\_\_\_\_\_\_ of a solid is the amount of  space it occupies  h) The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a container is the  amount of fluid (liquid or gas) it holds |  |