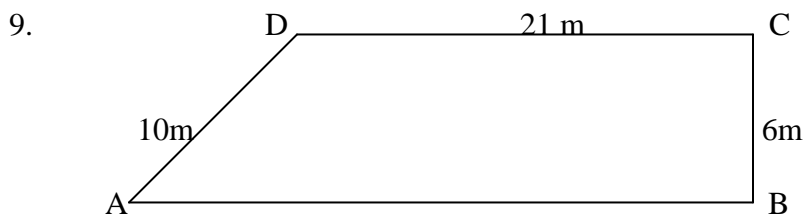


## SENIOR TWO MATHEMATICS HOLIDAY WORK TEST 1

Attempt all questions and show all the working.

1. Simplify:  $3\frac{1}{4} + 2\frac{1}{8} - 1\frac{3}{5}$ .
2. Find  $32_{\text{six}} \times 45_{\text{six}}$  in base ten.
3. Find the equation of the line that passes through (4, 10), (3, 8), (6, 14).
4. If  $a * b = \frac{a^2}{b}$ , find  $(10 * 5)$
5. Mukasa and Jane are to share Shs 60,000. If Jane takes  $\frac{2}{5}$  of the share, what does Mukasa take?
- 6.(a) Simplify the following: (i)  $3a + 5a$                       (ii)  $3y + y + 7y$   
(b) Solve for x if  $3x + 12x = 8 - 3x$ .
7. Write down the next three terms of each sequence.
  - (a) 1, 3, 5, 7, 9, 11, -----, -----, -----
  - (b) 2, 6, 18, 53, -----, -----, -----.
8. The interior angle of a regular hexagon is  $108^\circ$ , how many sides does it have?



- The figure ABCD shows a plot of land in form of a trapezium. Lengths  $BC = 6\text{m}$ ,  $CD = 21\text{m}$  and  $DA = 10\text{m}$ .
- a) Find the;
    - i) length AB of the plot,
    - ii) area of the plot.

10. Using a ruler, a pencil and a pair of compasses only.
- Construct a triangle PQR such that  $PQ = 8$  cm, angle  $PQR = 60^\circ$  and angle  $RPQ = 45^\circ$ .
  - Construct the perpendicular from R onto PQ to meet it at M. Measure the length RM and determine the area of triangle PQR.
  - Draw a circumcircle and measure its radius

11. A bus left Kampala at 8.00a.m and traveled towards Iganga at an average speed of 80km/h. After the bus has travelled a distance of 40km a car left Iganga towards Kampala at an average speed of 120km/h. Given that the distance between Kampala and Iganga is 400km.

Draw a distance – time graph and use it to find;

- The time the car arrived in Kampala.
  - The time the two vehicles met.
  - The distance from Kampala to the meeting point.
  - The distance of the bus from Iganga when the car arrived in Kampala.
  - The difference in times of arrival of the two vehicles
12.  $A = \{ (x,y) : y \geq 1 \}$ ,  $B = \{ (x,y) : x \geq 2 \}$   
 $C = \{ (x,y) : x + y \leq 8 \}$
- Show the region  $D = A \cap B \cap C$  on graph paper and find its area.
13. The distance  $d$  km, covered by an aeroplane flying at a speed of 500km/h for  $t$  hours is  $d = 500t$ .
- Draw a straight line graph to illustrate this relation for values of  $t$  from 0 to 3.
  - Use the graph to find how far the plane goes in  $1 \frac{1}{2}$  hours.
  - Use the graph to find how long it takes the plane to cover 430km.
14. On a squared paper plot  $\Delta ABC$  whose vertices are  $A(2, 2)$ ,  $B(4, 2)$ ,  $C(2, 4)$ .
- Find the image of  $A^1 B^1 C^1$  of  $ABC$  after a reflection in  $y = 1$ .
  - Find the image  $A''B''C''$  when  $A^1 B^1 C^1$  is reflected in  $x + y = 0$ .

**END**