

ANESTAR VICTORY BOYS

MATHEMATICS FORM 2 APRIL HOLIDAY ASSIGNMENT 2021

1. Without using mathematical tables or calculators, evaluate: (3mks)

$$\frac{0.38 \times 0.23 \times 2.7}{0.114 \times 0.0575}$$

2. Without using a calculator, evaluate: (3mks)

$$\frac{2\frac{1}{2} - 1\frac{1}{5} \text{ of } 2}{\frac{1}{4} - (-\frac{1}{4})^3}$$

3. Determine the equation of the line through the point A(5,3) and parallel to the line $y = 2x + 3$ (3mks)

4. Given that $\left[\frac{3-4m}{m} = \frac{2-9}{m}\right]$, find the value of m. (3mks)

5. The table below shows speeds of vehicles measured to the nearest 10km/h as they passed a certain point

Speed (km/h)	30	40	50	60	70	80	90	100	110
Frequency	1	4	9	14	38	47	51	32	4

- Prepare a frequency distribution table for the above information (4mks)
- Calculate the mean speed of the vehicles. (2mks)
- State the modal speed (1mk)
- Calculate the median speed (3mk)

6. A container is in the form of a frustum of a right pyramid 4 m square at the bottom, 2.5m square at the top and 3m deep. Calculate the capacity of the container. (4mks)
7. The results of a survey are as shown in the field book below

	Y	
	250	
	240	70D
C80	170	
	70	60B
A60	50	
	X	

If all the measurements are in metres, calculate the area of the field in:

- i. Using a suitable scale, draw the map to show the survey area (4mks)
 - ii. m^2 (4mks)
 - iii. ha (2mks)
8. A solid metal cone has a diameter of 14cm and a height of 24cm. calculate the surface area of the cone. (3mks)
9. The length of 40 athletes in a country athletics competition were as shown in the table below:

Height (cm)	Frequency (f)
150-159	2
160-169	8

170-179	10
180-189	Y
190-199	6
200-209	2

- a) Find the value of y. (2mks)
- b) State the modal class (1mk)
- c) Calculate the mean height of the athletes (4mks)
- d) Calculate the median height of the athletes (3mks)
- e) Draw a histogram to represent the information shown above (3mks)

10. A line L passes through points $(-2, 3)$ and $(-1, a)$. It is perpendicular to a line that passes through point $(-1, 6)$.

- a. Find the equation of L. (2mks)
- b. Find the equation of p in the form $y=mx+c$. (2mks)
- c. Another line Q is parallel to L and passes through point $(1,2)$. Find the equation of Q. (3mks)
- d. Find the point of intersection of the lines P and Q. (3mks)

11. A right pyramid has a square base of 8cm and a slant height of 20cm. A smaller pyramid is cut of such that a frustum is formed. If the slant height of the cut-off pyramid is 10cm,

- a. Find the length of the square base of the smaller pyramid. (2mks)
- b. Calculate to 2 decimal places
 - i. The length of the diagonal of the base of the smaller pyramid (2mks)

- ii. The perpendicular height of the smaller pyramid (2mks)
- c. Find the volume of the frustum formed (correct to 2 decimal places) (4mks)
12. A bus left Nairobi at 6.00 a.m. and travelled towards Kericho at an average speed of 100km/h. at 6.30 a.m., a van left Kericho and travelled towards Nairobi to receive the bus with a number of people moving at an average speed of 125km/h. given that the distance between Nairobi and Kericho is 500km, calculate:
- a. The time the two vehicles met (4mks)
- b. On meeting the bus proceeded with its journey but the van had a break of 30 minutes before proceeding for Kericho. Calculate:
- i. The time the bus arrived at Kericho (3mks)
- ii. The time the van arrived at Kericho (3mks)
13. A cone of radius 5cm has a curved surface of area of 109.9cm^2 . Calculate the volume of the cone. (4mks)
14. Three towns P, Q, and R are such that Q is 150km from P on a bearing of 043° . The bearing of R from P is 133° and the bearing of R from Q is 160° . Calculate the distance of R from P, Q from R and the bearing of P from R. (4mks)
15. The ratio of the area of two similar rooms is $\frac{4}{25}$.
- a. Find the area of the bigger room if the area of the smaller room is 8m^2 . (2mks)
- b. Find the ratio of their lengths (2mks)
- c. If the length of the larger room is 10 m, find the length of the smaller one. (2mks)
16. Show the region represented by

$$2x + y > 3$$

$$x - y \leq 4$$

$$y \leq 3$$

(4mks)

###END###