



# BRIGHT MINDS JUNIOR SCHOOL PRE-PE EXAMINATION MATHEMATICS

*Time allowed: 2 hours 15 minutes*

Name: \_\_\_\_\_

School: \_\_\_\_\_

Read the following instructions carefully:

1. The paper has two sections: A and B
2. Section A has 40 questions (40 marks)
3. Section B has 15 questions (60 marks)
4. Answer ALL questions. All answers to both Sections A and B must be written in the spaces provided.
5. All answers must be written using a blue or black ball point pen or ink. Diagrams should be drawn in pencil.
6. Unnecessary crossing of work may lead to loss of marks.
7. Any handwriting that cannot be easily read may lead to loss of marks.
8. Do not fill anything in the boxes indicated;  
For Examiner's use only.

FOR EXAMINER'S USE ONLY		
Qn. No	MARK	SIGN
1 – 10		
11 – 20		
21 – 30		
31 – 40		
41 – 43		
44 – 46		
47 – 49		
50 – 52		
53 – 55		
TOTAL		

**SECTION A (40 MARKS)**

1. Add  $27 + 61$
  
  
  
  
  
  
  
  
  
  
2. Given that  $X = \{1, 2, 3, 4, 5\}$
  
  
  
  
  
  
  
  
  
  
3. Round off 54.67 to the nearest whole number.
  
  
  
  
  
  
  
  
  
  
4. Find the next number in the sequence below  
2, 3, 6, 12, 22, \_\_\_\_\_
5. Simplify:  $-2 - -8$
  
  
  
  
  
  
  
  
  
  
6. Given that  $a = -3$  and  $b = 2$ , find the value of  $2(a - b)$

7. A car uses 7 litres of petrol for every 25km. How many litres are needed for a journey of 75km?

8. Express 00:25 hours in 24-hour clock system.

9. A shopkeeper bought 50kg bag at sh.165,000. At what price must he sell the sugar in order to make a profit of sh. 25,000?

10. Find the value of n if:  $22_n = 122_{\text{three}}$

11. Find the area of a semi-circle whose radius is 21 dm. (Take  $\pi = \frac{22}{7}$ )

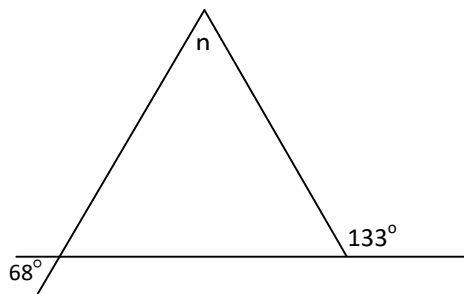
12. The total surface area of a cube is  $24\text{cm}^2$ . Find its volume.

13. The bearing of A from B is  $250^\circ$ . What is the bearing of B from A?

14. In a class, the ratio of boys to girls is 3:2. If there are 18 boys, how many pupils are in the class?

15. A cyclist covered 30km in 40 minutes. What was his speed in Km/hr?

16. Find the value of angle n



17. A rectangular plot of land is to be fence with posts at intervals of 5m. If the plot measures 90m by 30m. How many posts are needed to fence the plot?

18. Write 0.2333...as fraction in its lowest terms.

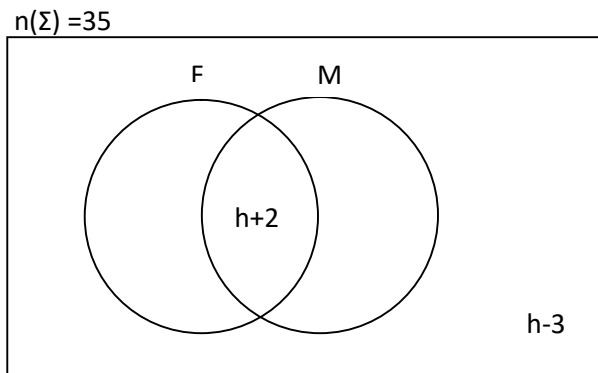
19. Express 0.00457 in scientific notification.

20. Ruth scored the following marks in a series of tests: 63, 48, 51, 73, 66 and 51. What was his median mark?

**SECTION B (60 MARKS)**

21. 35 guests were invited to a certain party, 22 of the liked meat (M),  $h+2$  guests liked both the fish (F) and meat (M),  $(h-3)$  ate none of these.

(a) Complete the Venn diagram below.

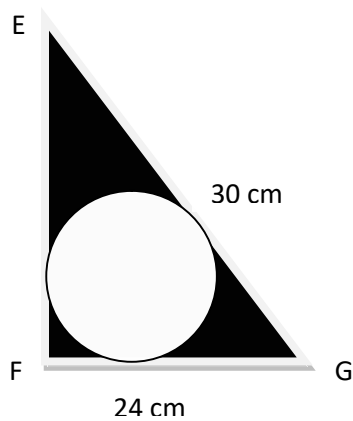


(b) Find the value of  $h$

(c) How many guests ate fish?

(d) A cyclist covered 60% of his journey in 2 hours and 40 minutes. How long was the journey if the cyclist was travelling at 90km per hour?

22. Figure **EFG** below shows a circle inscribed in a triangle.



(a) What is the height of **EF**?

(b) Calculate the radius of the circle if the area of the shaded part is  $62\text{cm}^2$ . (Use  $\pi$  as  $\frac{22}{7}$ )

23. Musolini used his salary as follows:  $\frac{1}{3}$  on fees,  $\frac{1}{4}$  on transport,  $\frac{1}{8}$  on clothes and saved the rest.  
He saved sh. 280,000

(a) Find the fraction saved.

(b) How much was his salary?

24. (a) Using a ruler and a pair of compasses only, construct a triangle **XYZ** in which **XY** = 7.4cm and **XYZ** =  $30^{\circ}$  and angle **XYZ** =  $75^{\circ}$

b) Measure **YZ**

**YZ** = \_\_\_\_\_ cm

25. (a) Solve:  $0.8(h-2) - 0.25(h-6) = 1$

b) Abalo is 18 years old while Nakiwala is 4 years old. In how many years' time will Nakiwala be half as old as Abalo?



26. Jacob went shopping and bought the following items:

2 loaves of bread at sh. 5,500 per loaf

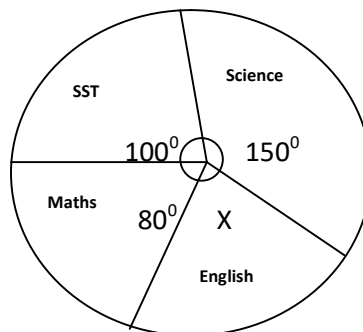
3 bars of soap for sh. 6,200 per bar

$2\frac{1}{3}$  kgs of salt for sh. 600 per 500kg

(a) What was his total expenditure?

(b) If he was given 10% discount, how much did he pay for all the items?

27. The pie-chart below shows the number of books in a store. Study it and answer the questions that follow.



(a) Find the value of X

(b) If there are 12 more books for Science than English, how many books are there in the store altogether?

(c) Express the number of books for Maths as a percentage of the total number of books in the store.

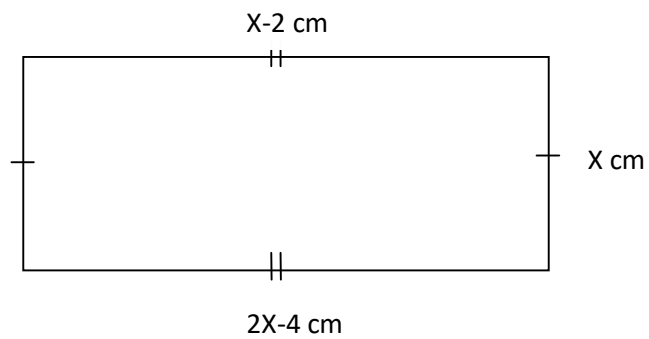
28. (a) A rectangular polygon has one of its exterior angle of  $40^\circ$ .

(i) How many sides has the polygon?

(ii) How many right angles does the polygon have?

(iii) What is the interior angle sum of the polygon?

29. Use the diagram below to answer the questions that follow:



(a) Find the value of  $x$ .

(b) Work out the area of the rectangle.

30. A tank is exposed to three taps: tap A can fill the tank in 8 minutes, tank B can fill the same tank in 6 minutes while tap C can empty the tank in 4 minutes.

(a) How much time will the taps take to fill the tank if all the three taps are open at the same time?

31. (a) Using a ruler, pencil and a pair of compasses only, construct a triangle **ABC** in which **AB** = 8cm, **BC**=6cm and **ABC** =  $120^{\circ}$ .

(b) Measure length **AC**