



BLANTYRE SECONDARY SCHOOL CLUSTER

2026 JUNIOR CERTIFICATE EXAMINATION

MATHEMATICS

(100 marks)

Subject number: J131

Time allowed: 2 hours

Monday, 30 March

8:00 – 10:00 pm

Instructions

1. This paper contains **13 pages**. Please check.
2. Attempt **all** the **20** questions in this paper
3. The maximum number of marks for each answer is indicated against each question.
4. Write your **name** at the top of each page of your question paper in the spaces provided.
5. Scientific calculators may be used.
6. Write your answers in the spaces provided on this paper
7. All working must be clearly shown
8. In the table provided on this page, tick against the question number you have answered.

Question number	Tick if answered	Do not write in these columns	
1			
2			
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Turn over

Answer **all** the **twenty** questions in the spaces provided under each question.

1. a. Given that $b = 4$, $x = -\frac{1}{2}$, $n = 2$ and $d = -\frac{1}{3}$. Evaluate $b(x^n - d)$

[3 marks]

b. Simplify $1432_5 - 233_4 + 5632_7$, giving your answer in base 6.

[5 marks]

2. Two sets **A** and **B** are such that;

Set A = {*odd numbers between 1 and 10* } and

Set B = {*prime numbers between 1 and 10* }

- a) Represent the information on a Venn diagram

[3 marks]

- b) Calculate the number of subsets for the intersection

[2 marks]

3. a. Make **d** subject of the formula given that $y = x(a + 2\frac{n}{d})$

[3 marks]

b. Simplify the expression $\frac{2a-2b}{8ab^2} \div \frac{5a-5b}{-20a^3b}$

[4 marks]

4. For the AP 17, 13, 9 ... Find

a. The formula for the n^{th} term

[4 marks]

b. The 5th term

[3 marks]

5. Hilla puts **6 Green** marbles, **4 Pink** marbles, and **8 Red** marbles in a container and he picks one marble at random. Calculate the probability that he did not pick a **Red** and a **Pink** marble.

[3 marks]

6. Lalla works as a financial controller and earns **K500,000** per month. She is allowed **K80,000** tax free per month. If she pays **35%** income tax per month on the remaining amount. Calculate the total amount of money she gets after tax in a year.

[4 marks]

7. The difference between the square of x times 9 and 42 times x is -49 . Find x in fraction form.

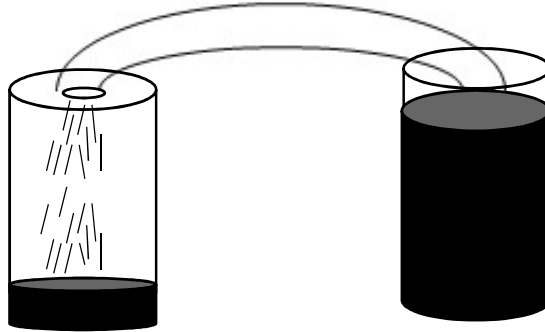
[6 marks]

8. Two angles x and y are such that their sum makes a complementary angle and the sum of x and six times y gives a supplementary angle. Find the angles given by variables x and y .

[5 marks]

9. **Figure 1** shows a **4m** long pipe with a diameter of **140cm** being used to draw water from one drum to the other. Find **the area of the pipe in metres to 3 significant figures**.

(Take π as $\frac{22}{7}$)

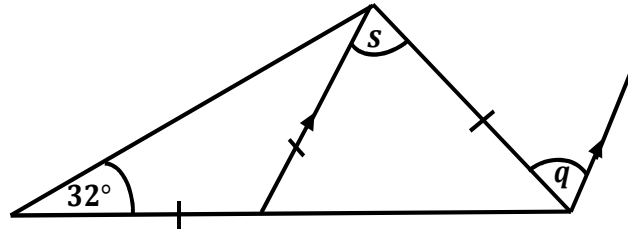


[5 marks]

10. The interior angle of a regular polygon is $6\frac{1}{2}$ times the exterior angle. How many sides has the polygon?

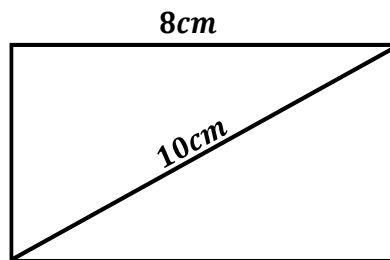
[4 marks]

11. **Figure 2** shows a diagram of two triangles and an angle outside these triangles. Find the sizes of the marked angles.



[4 marks]

12. **Figure 3** is a rectangle whose length is **8cm** and its diagonal is **10cm**. Find the difference between the area and the perimeter of the rectangle.



[4 marks]

13. Given that $\log 3 = 0.4771$ without using a calculator, find $\log 3^2$

[2 marks]

14. If the mean for the set of data given by 3, 5, $2x$, 6, 7 and 9 is 6.
Find the **mode**.

[4 marks]

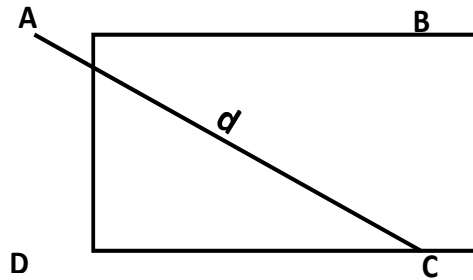
15. Desire wants to buy a sneaker, she goes into a shop, the seller tells her that each sneaker costs x . She asks for a discount and the seller replies to say; for a discount, you take away 5 from **two-thirds** of the original price per sneaker. Desire notices that after the discount the final price per sneaker is **less than 7**. Find the possible original price

[5 marks]

16. Lille insured her car at a cost of K4, 000,000 at 70% premium in case of accident. After an accident Lille claimed her compensation which she was given. She then invested the money at 35% simple interest p.a. How much money will she make from the compensation in 4 years?

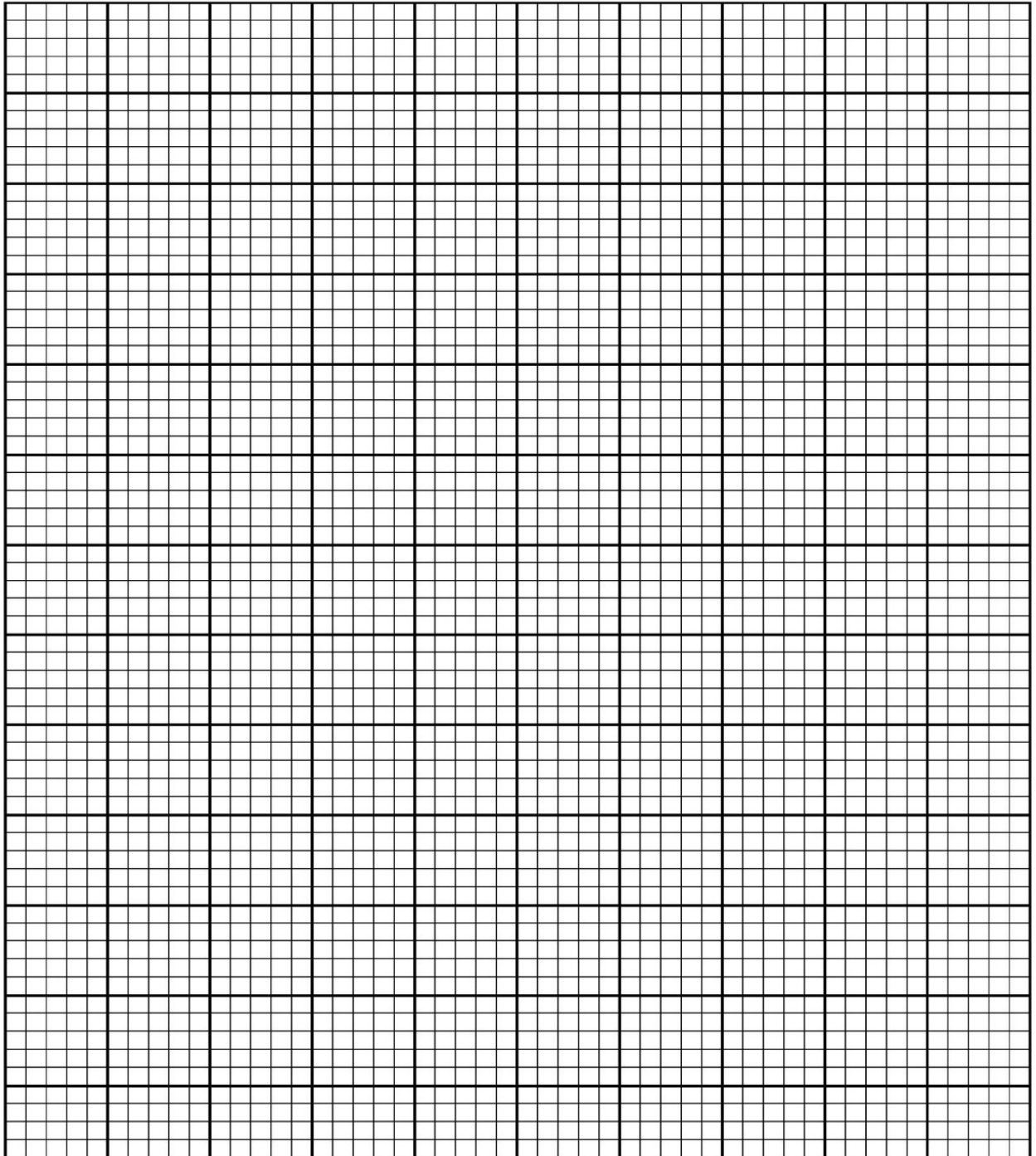
[5 marks]

17. Figure 4 shows a rectangle with two triangles. Show that the two triangles are equal and right angles.



[5 marks]

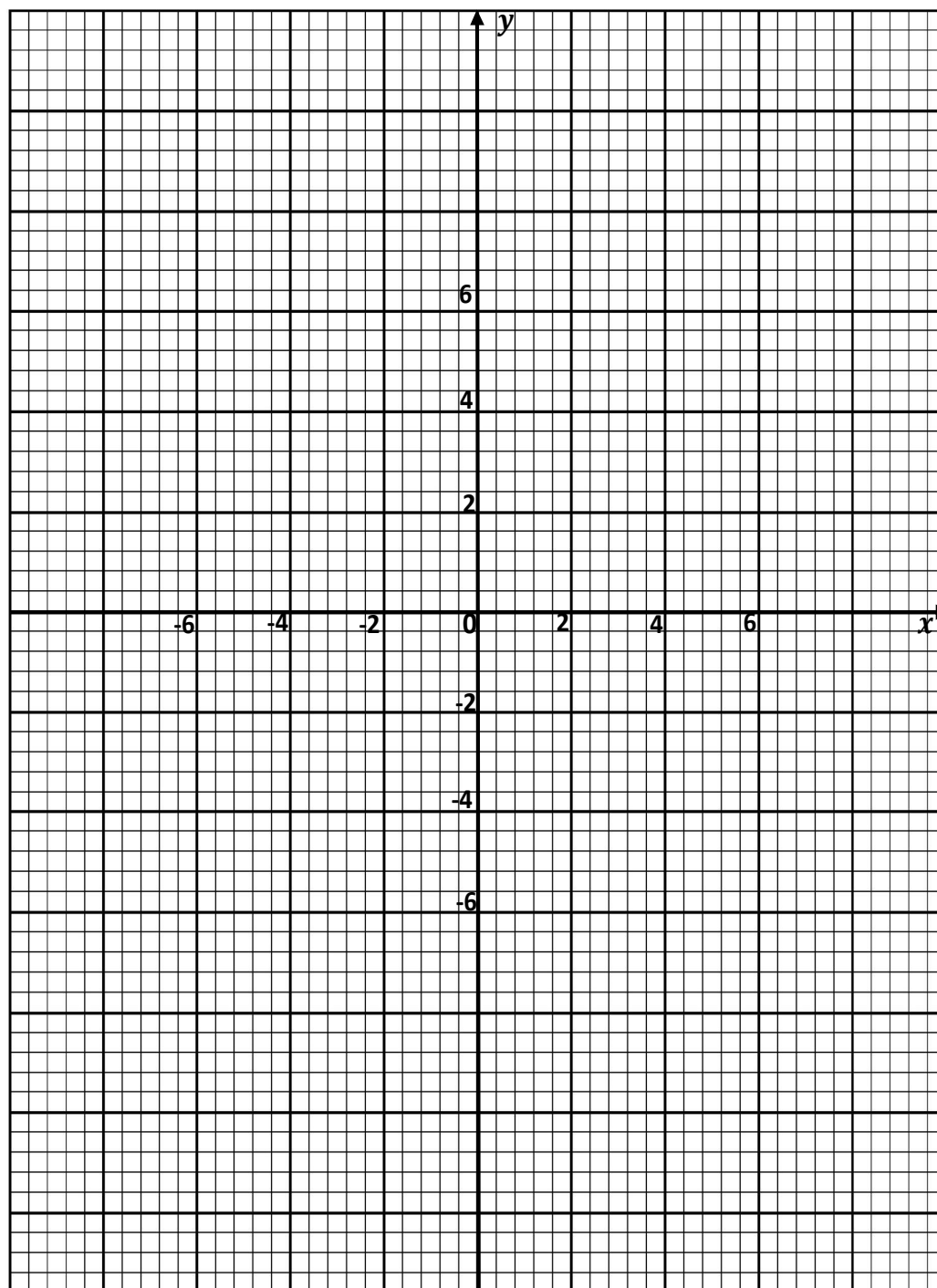
18. By taking **2cm** to represent **1 unit** on the x – **axis** and **2cm** to represent **2 units** on the y – **axis**. Solve the simultaneous equation given by $3x + y = 6$ and $6x - y = 3$ by graphical method.



[6 marks]

19. On the graph below draw a triangle with vertices $A(-1, 2)$, $B(1, 5)$ and $C(3, 4)$.
Reflect the triangle in the mirror lines

- i. $y = x$
- ii. $y = -x$



[5 marks]

20. Mr Solobala left home at **6:00am** for Lilongwe, he boarded a bus that travelled a distance of **15km** for **2 hours**, it then had a breakdown for **2 hours** and it continued its journey after the breakdown for another **2 hours** for a **10km** more, again it had another breakdown which lasted for **3 hours** and it proceeded its journey to Lilongwe after the breakdown for **4 hours** covering another distance of **20km**. By taking **2cm** to represent **2 units** on the $x - axis$ and **2cm** to represent **5 units** on the $y - axis$.

i. Draw a Distance-Time graph

[4 marks]

ii. Find its speed after the final breakdown.

[2 marks]

END OF QUESTION PAPER