



# BROAD EXAMINATIONS®

## P.5 MATHEMATICS EXAMINATION

### TRIAL SET I TERM III - 2022

Time allowed: 2 hours 30 minutes

Pupil's Name: .....

School Name: .....

District Name: .....

Read the following instructions carefully:

1. This paper is made up of two sections: A and B.
2. Section A has 20 questions (40 Marks)
3. Section B has 12 questions (60 Marks)
4. Answer ALL questions in both sections A and B.
5. All answers must be written in the space provided in blue or black ball point pens and ink. **Only diagrams should be done in pencil.**
6. Unnecessary crossing of answers will lead to loss of marks.
7. Any handwriting, which cannot be easily read, may lead to loss of marks.
8. Do **not** fill anything in the boxes indicated for Examiners' use only.

FOR EXAMINERS' USE ONLY

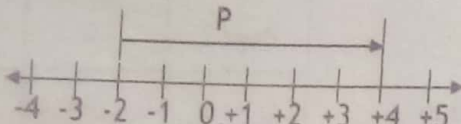
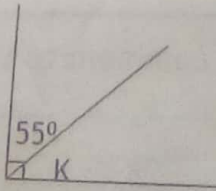
PAGES	MARKS	SIGN
Page 2		
Page 3		
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Page 5		
Page 6		
Page 7		
Page 8		
TOTAL		

Teacher's comment to the learner

Approved by:

Team Head Mathematics Dept.

# SECTION A (40 Marks)

1. Multiply $\begin{array}{r} 22 \\ \times 4 \\ \hline \end{array}$	2. Write 491 in words.								
3. Find the next two numbers in the sequence. 41, 36, 31, 26, _____, _____	4. Given that set $P = \{a, b, c, d, e, f\}$ and $Q = \{a, e, i, o, u\}$ . Find $n(P \cap Q)$ .								
5. What integer is shown by the arrow P below.  P = _____	6. Work out: <table> <tr> <td>kg</td> <td>g</td> </tr> <tr> <td>4</td> <td>250</td> </tr> <tr> <td>5</td> <td>750</td> </tr> <tr> <td colspan="2"><hr/></td> </tr> </table>	kg	g	4	250	5	750	<hr/>	
kg	g								
4	250								
5	750								
<hr/>									
7. The cost of a mathematical set is sh. 5000. How many mathematical sets can one buy with sh. 15000?	8. Wandela is a 17 year old boy. Write his age in Roman numerals.								
9. Angella turned clockwise from North to face South East. What angle did she turn?	10. Find the size of the angle marked K in the figure below. 								

11. The perimeter of a square is 44cm.  
Find the length of its side.

12. What number is added to 9 to get 16?


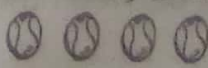
13. Find the expanded number as 6  
hundreds + 4 tens.

14. Express 231<sub>five</sub> in base ten.

15. John bought a watch at sh. 8500 and  
sold it making a loss of sh. 1800.  
What was the selling price of the  
watch?

16. Add: 
$$\begin{array}{r} 2 \quad 1 \\ +3 \quad 9 \\ \hline \end{array}$$

17. Moses covered a distance of 40km in  
5 hours. What was his speed?

18. Given that  represents 5 balls.  
How many balls are represented by  
 ?

19. Convert 4000g to kg.

20. Write 14 using tallies.



**SECTION B: (60 MARKS)**

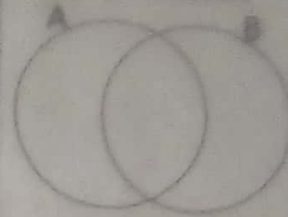
21. Given that set A = {counting numbers less than 10} and set B = {odd numbers less than 10}.

(a) List all elements in set;

(i) A

(ii) B

(b) Put all the elements on the venn diagram below.



22. Given the number 4 9 6 3.

(05 marks)

(a) Write the place value of 9 in the number above.

(b) Write the number 4 9 6 3 in expanded form.

(c) Round off the number above to the nearest hundreds.

(05 marks)

23. A motorist takes 6 hours to travel from Rukungiri town to his home at a speed of 14km/hr.

(a) What distance is it between the two places?

(b) Express 180 minutes in hours.

(c) Write "a half past three o'clock" in figures.

(05 marks)

24.
(a) Solve:  $y + 4 = 12$

(b) John gave away 12 oranges and remained with 4 oranges. How many oranges did he have?

(04 marks)

25.
The table below shows the amount of money Mr. Muriisa got at his shop.

Denomination	No of notes	Amount
1000 shilling note	15	Sh. _____
5000 shilling note	4	Sh. _____
_____ shilling note	1	10,000
50,000 shilling note	2	Sh. _____
Total amount		Sh. _____

(05 marks)

26.
(a) Subtract: 
$$\begin{array}{r} 432_{\text{five}} \\ -231_{\text{five}} \\ \hline \end{array}$$

(b) Write  $43_{\text{ten}}$  in base five.

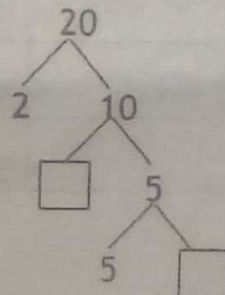
26. Write the place value of 2 in 423five.

27. (a) Find the Lowest Common Multiple (LCM) of 4 and 7.

(b) List all factors of 12.

(05 marks)

(c) Complete the factor tree below.



(06 marks)

28. (a) Simplify:  $\frac{1}{6} - \frac{1}{7}$

(b) Work out;  $1.09 + 3.41$

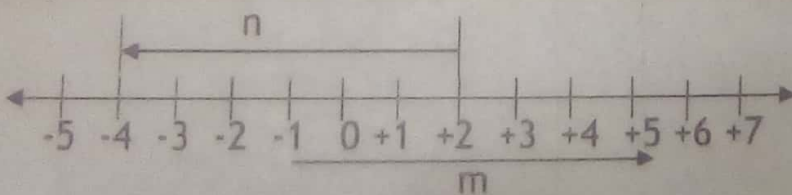
(04 marks)

29. (a) Using a pair of compasses, a ruler and a pencil only, construct a regular hexagon of radius 3cm.

(b) Work out its perimeter.

(5 marks)

30. Study the number line below and use it to answer questions that follow.



(a) Write the integers shown by arrows on the number line above.

(i) n

(ii) m

(b) What integer is two steps to the right of +4?



10. What is the inverse of -2?

11. Work out the following.

(04 marks)

(i)

m	cm
3	45
<u>+6</u>	<u>10</u>

(ii)

L	ml
14	670
<u>-7</u>	<u>490</u>

(iii) Convert  $4\frac{1}{2}$ kg to grammes.

12. Below are the marks scored by a pupil in End term II Exams.

(06 marks)

ENG	MTCS	SCI	RE	SST
70	95	80	75	80

a) What was the modal mark?

(b) Calculate the range of marks.


(c) Work out the mean mark.

(06 marks)

END



# BROAD EXAMINA P.5 MATHEMATICS

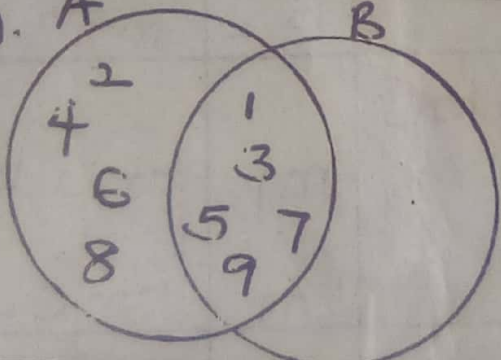
Qn.	Class	Solution	Marks	Comments
1	P.3	$\begin{array}{r} 22 \\ \times 4 \\ \hline 88 \end{array}$	B2	for 88
2	P.2	Four hundred ninety One.	B2	follow through
3	P.4	$\begin{array}{ccccccc} & -5 & & -5 & & & \\ 41, & 36, & 31, & 26, & 21, & 16 \\ & -5 & & -5 & & -5 \end{array}$	B1 B1	for 21 for 16
4	P.5	$(P \cup Q) = \{a, b, c, d, e, f, g, i, o, u\}$ $n(P \cup Q) = 10 \checkmark$	m1 A1	for listing for 10
5	P.5	$P = \{ \epsilon \}$	B2	for $\{ \epsilon \}$
6	P.4	$\begin{array}{r} \text{kg} \quad \text{g} \\ 4 \quad 250 \\ 5 \quad 750 \\ \hline 10 \quad 000 \end{array}$	B2	for 10kg
7	P.5	$\begin{array}{r} 3 \\ 5 \overline{) 15} \\ \underline{15} \\ 0 \end{array}$ 3 Sets.	m1 A1	for dividing for 3
8	P.4	$17 = 10 + 7$ $= X \text{ VII}$ $= XVII \checkmark$	B2	for XVII
9	P.5	 $45^\circ \times 3$ $135^\circ$	m1 A1	follow through

# ATIONS GUIDES

## SET I TERM III 2022

Qn.	Class	Solution	Marks	Comments
10	P 4	$K + 5.5 = 90$ ✓ $K + 5.5 - 5.5 = 90 - 5.5$ $K = 84.5$	M1 A1	for 90 - 5.5 for 84.5
11	P 5	$4S = 44 \text{ cm}$ ✓ $\frac{4S}{4} = \frac{44}{4} \text{ cm}$ $S = 11 \text{ cm}$	M1 A1	for $\frac{44}{4}$ for 11 cm
12	P 3	$18 - 9 = 9$	B2	for 9
13	P 4	6 hundreds + 4 tens $6 \times 100 + 4 \times 10$ $600 + 40$ $640$	M1 A1	for adding for 640
14	P 5	$255$ five: $(2 \times 5 \times 5) + (3 \times 5) + (1 \times 1)$ $50 + 15 + 1$ $66 \text{ ten}$	M1 A1	for expanding for 66
15	P 5	$\begin{array}{r} \text{sh } 8500 \\ - \text{sh } 1800 \\ \hline \text{sh } 6700 \end{array}$	M1 A1	for 8500 - 1800 for sh 6700
16	P 3	$\begin{array}{r} 21 \\ + 39 \\ \hline 60 \end{array}$ ✓	B2	for 60
17	P 5	$S = A \div T$ $\frac{40 \text{ km}}{5 \text{ hr}}$ $= 8 \text{ km/hr}$	M1 A1	for $\frac{40}{5}$ for 8 km/hr



Qn.	Class	Solution	Mark	Comments	Qn.
18.	P.4	4x5 balls 20 balls	M/ A	for 4x5 for 20	23
19.	P.4	1000g $\longrightarrow$ 1kg 4000g $\longrightarrow$ $\frac{4000}{1000}$ 4kg.	M/ A	for $\frac{4000}{1000}$ for 4kg	
20.	P.4	14 = IIII IIII IIII	B2	for IIII IIII IIII	
21.	P.5	a) (i) $A = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$ B1 (ii) $B = \{1, 3, 5, 7, 9\}$ B1		Follow Through	24.
		b). A  B	B1. B1 B1	Follow Through	25.
22.	P.4	a). $\begin{array}{cccc} \text{TH} & \text{H} & \text{T} & \text{O} \\ 4 & 9 & 6 & 3 \end{array}$ Hundred s v	B1	for hundreds	
		b). $\begin{array}{cccc} \text{TH} & \text{H} & \text{T} & \text{O} \\ 4 & 9 & 6 & 3 \end{array}$ $4 \times 1000 + 9 \times 100 + 6 \times 10 + 3 \times 1$ $4000 + 900 + 60 + 3$	B2	Follow Through	
		c). $\begin{array}{cccc} \text{TH} & \text{H} & \text{T} & \text{O} \\ 4 & 9 & 6 & 3 \\ + & 1 & 0 & 0 \\ \hline 5 & 0 & 0 & 0 \end{array}$	M/ A	Follow Through	

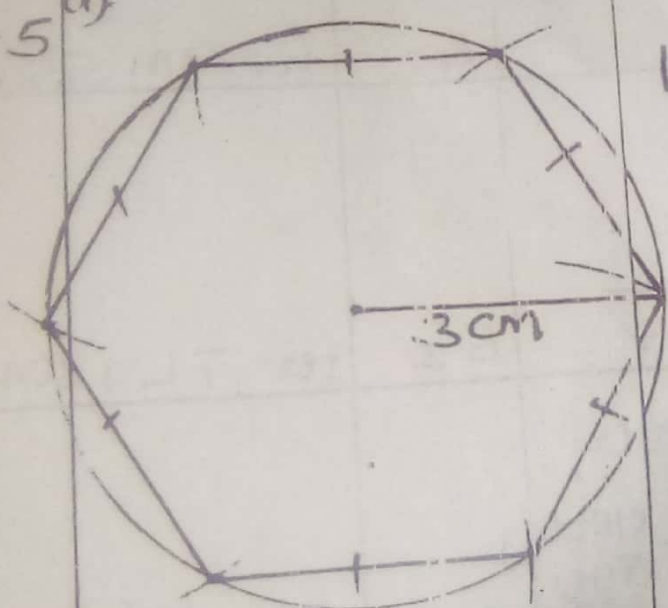


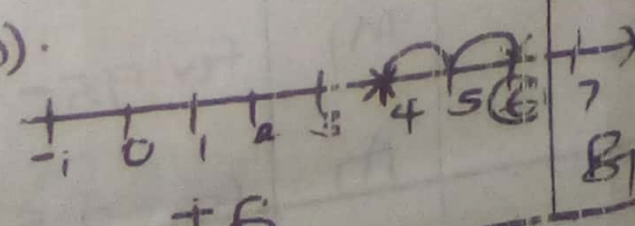
Qn.	Class	Solution	Comments
23	P.5	<p>a) <math>D = 14 \text{ km/hr} \times 6 \text{ hr}</math>  <math>= 14 \text{ km} \times 6</math>  <math>= 84 \text{ km}</math></p> <p>b) <math>60 \text{ min} \rightarrow 1 \text{ hr}</math>  <math>180 \text{ min} \rightarrow \frac{180}{60} = 3 \text{ hours}</math></p> <p>c) 3:30</p>	<p>m1 for 14x6</p> <p>A1 for 84 km</p> <p>m1 for <math>\frac{180}{60}</math></p> <p>A1 for 3 hours</p> <p>B1 for 3:30</p>
24	P.5	<p>a) <math>y + 4 = 12</math>  <math>y + 4 - 4 = 12 - 4 \checkmark</math>  <math>y = 8</math></p> <p>b) <math>12 + 4 = 16 \text{ oranges}</math></p>	<p>m1 for 12-4</p> <p>A1 for 8</p> <p>m1 for 12+4</p> <p>A1 for 16</p>
25	P.4	<p>sh(5x1000)  <u>sh 5000</u> ✓</p> <p>sh 5000 x 4  <u>sh 20000</u> ✓</p> <p>sh 10,000  <u>sh 10,000</u> ✓</p> <p>sh 50000 x 2  <u>sh 100,000</u> ✓</p> <p>Total = sh 10,000  sh 10,000  + sh 20,000  + sh 15,000  <u>sh 45,000</u> ✓</p>	<p>B1 for sh 5000</p> <p>B1 for sh 20000</p> <p>B1 for 10,000</p> <p>B1 for sh 100,000</p> <p>B1 for sh 145,000</p>

Qn.	Class	Solution	marks	Comments												
26	P.5	<p>a) <math display="block">\begin{array}{r} 432 \text{ five} \\ - 231 \text{ five} \\ \hline 201 \text{ five} \end{array}</math></p> <p>b) <math>43 \text{ ten} =</math></p> <table border="1"> <tr><td>5</td><td>43</td><td>3</td></tr> <tr><td>5</td><td>8</td><td>3</td></tr> <tr><td>5</td><td>1</td><td>1</td></tr> <tr><td></td><td>0</td><td></td></tr> </table> <p><math>43 \text{ ten} = 133 \text{ five}</math></p> <p>c) <math display="block">\begin{array}{r} 4 \text{ five} \\ 2 \text{ five} \\ 3 \text{ five} \\ \hline \end{array}</math> fives ✓</p>	5	43	3	5	8	3	5	1	1		0		<p>B 2 for 201 five</p> <p>M 1 for dividing</p> <p>A 1 for 133 five</p> <p>B 1 for fives</p>	
5	43	3														
5	8	3														
5	1	1														
	0															
27	P.5	<p>a) <math display="block">\begin{array}{r} 2 \ 4 \ 7 \\ 2 \ 2 \ 7 \\ \hline 7 \ 1 \ 7 \\ \hline 1 \ 1 \end{array}</math> ✓</p> <p><math>2 \times 2 \times 7</math> <math>4 \times 7</math> <math>28</math></p> <p>b) <math>F_{12} = 1 \times 12</math> <math>= 2 \times 6</math> <math>= 3 \times 4</math> <math>1, 2, 3, 4, 6, 12 \checkmark</math></p> <p>c) <math display="block">\begin{array}{c} 20 \\ \swarrow \searrow \\ 2 \quad 0 \\ \swarrow \searrow \\ \boxed{2} \quad 0 \\ \swarrow \searrow \\ 5 \quad 1 \end{array}</math></p>	<p>M 1 for prime factorisation (Accept listing factors)</p> <p>A 1 for 28</p> <p>B 2 for 1, 2, 3, 4, 6, 12</p> <p>B 1 for <math>\boxed{2}</math></p> <p>B 1 for <math>\boxed{1}</math></p>													



28	P.5	a) $\frac{1}{6} - \frac{1}{7} = \frac{7-6}{42}$ $= \frac{1}{42}$	m1 for $\frac{7-6}{42}$ A1 for $\frac{1}{42}$
		b) $1.09 + 3.41$ $\begin{array}{r} 1.09 \\ + 3.41 \\ \hline 4.50 \end{array}$	m1 for arrangement A1 for 4.5

29	P.5	a) 	L1 for radius C1 for circle A1 for joining
		b) $p = 6s$ $= 6 \times 3 \text{ cm} \checkmark$ $= 18 \text{ cm}.$	m1 for $(6 \times 3) \text{ cm}$ A1 for 18 cm.

30	P.5	a) $n = -6 \checkmark$ $m = +6 \checkmark$	B1 for -6 B1 for +6
2		b) 	B1 for +6



Let the inverse  
be n

$$n + 2 = 0$$

$$n - 2 = 0$$

$$n - 2 + 2 = 0 + 2$$

$$n = +2 \checkmark$$

B1

for +2

31 p. 4 (i)

m cm

3 45

+ 6 10

9 55  $\checkmark$

B2

for 9m 55cm

(ii)

L mL

14 670

- 7 490

7 180  $\checkmark$

B2

for 7L 180mL

(iii)

1kg  $\longrightarrow$  1000g

$4\frac{1}{2}$ kg  $\longrightarrow$   $4\frac{1}{2} \times 1000$ g

$9\frac{1}{2} \times 1000$ g  $\checkmark$  m1

for  $4\frac{1}{2} \times 1000$ g

9 x 500g

4500g

A1

for 4500g

32 p. 5

a).

modal mark

80  $\checkmark$

B1

for 80

b).

95

- 70

25

m1

for 95-70

A1

for 25

Solution	Marks	Comments
<p>c) Mean = <math>\frac{\sum I}{\sum f}</math> ✓</p> <p><math>\frac{70 + 95 + 80 + 75 + 130}{5}</math> m for adding</p> <p><math>\frac{400}{5}</math> m for dividing</p> <p>80</p> <p>Ans for 80</p> <p>OE</p>		