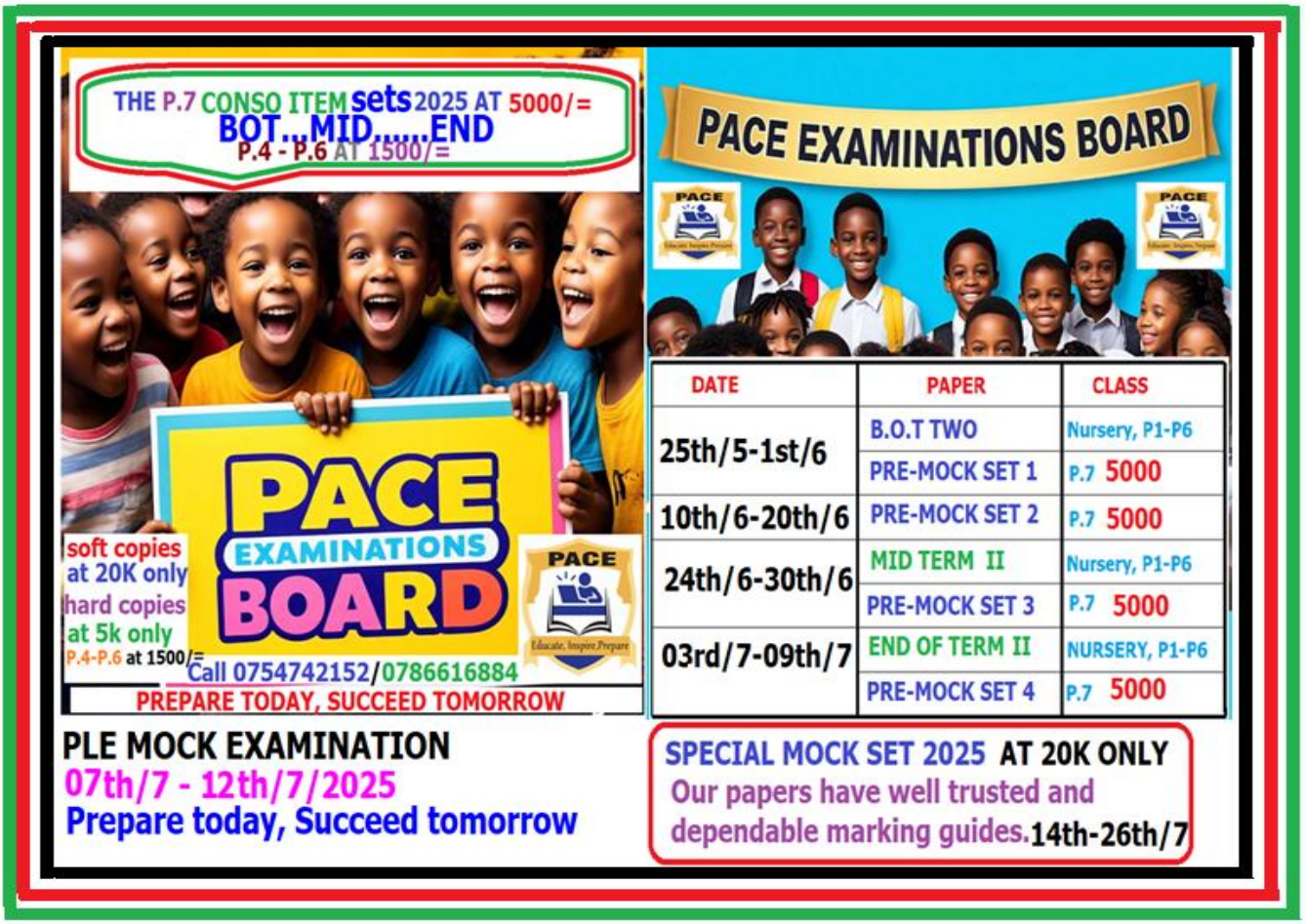
PACE- **P**REPARE **A** CHILD **E**XAMINATIONS BOARD

PRE- MOCK SET FOUR

2025

MATHEMATICS

OFFICIAL MARKING GUIDE



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SECTION: 40 MARKS

There are ***20*** questions in this section.

Answer ***all*** questions in this section.

1. Work out: 384 × 4

   384 X 4 = 300X4+80X4+4X4

   =1200+320+16

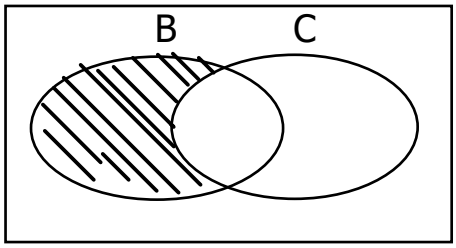
   =1536

2. Write 56.86 in words.

UNITS	DECIMALS
56	86

Five thousand six hundred eighty-six hundredths

3. In the Venn diagram, describe the shaded region.



B-C

4. Simplify: 2(3a – 2) – (a – 3)

   2X3a -2x2-a+3

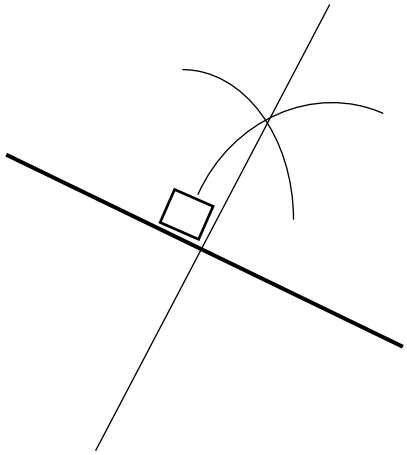
   6a – 4 – a +3

   6a – a +3-4

   5a +3-4

   5a - 1

5. Using a pair of compasses, ruler and a sharp only. Bisect the line below.



6. Write 444 in Roman numerals.

   444= 400+40+4

   =CD XL IV

   =CDXLIV

7. Find the numerical place value of 4 in 423_{five}

100fives	10fives	Ones
4	2	3

   =100fives

8. Nakalema bought $\frac{5}{8}$ kg of rice to make rice balls. Each rice ball requires 25 grams. Find the number of rice ball she made.

   1kg = 1000g

   .$\frac{5}{8}x1000g = 625g$

   625g ÷25g=25 rice balls

9. Work out: 0.9 + 1.25 ÷ 0.05

   Applying BODMAS

   0.9 + $(\frac{125}{100} \div \frac{5}{100})$

   0.9 +$(\frac{125}{100} X \frac{100}{5}$

   0.9 + 25=25.9

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10. Round off 49.746 to nearest ones place.

T	O(RPV)	t(NPV)	h	th
4	9	7	4	6

49.000
+1.000
50.000

$49.746 \approx 50$

11. Ampeire scored the following marks in her homework.

8, 8, 4, 7, 9, 12

How many times did she score her average?

Mean = total score÷number of items

=8+8+4+7+9+12

=48

Number of items = 6

Mean = 48÷6

=8

She scored it 3 times

12. Simplify: $3\frac{1}{2} : 2\frac{1}{3}$ to its simplest form.

$\frac{7}{2} \div \frac{7}{3}$

$\frac{7}{2} x \frac{3}{7}$

2:3

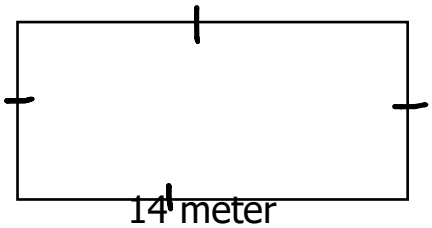
13. The square of the number is $6\frac{1}{4}$. Find the number.

$6\frac{1}{4} = \frac{25}{4}$

$\frac{\sqrt{25}}{4} = \frac{5}{2}$

5	25
5	5
	1

14. The perimeter of the figure below is 42 metres. Find its width.



Forming equation

Perimeter = 2(l + w)

42 m = (2x14m) +2w

42 m = 28m + 2w

42m – 28m =28m – 28m +2w

16m = 2w

8m = width

15. Work out (33x4) – (4x17) using common factor property.

(33-17)x4

16x4

64

16. Find the average speed in m/s for a lorry that cavers a distance of 280km/h for 2 ½ hours.

Average speed = total distance ÷ time

Total distance = 280km

Time = $\frac{5}{2}hr$

= $280km \div \frac{5}{2}h$

=$280km\ x\frac{2}{5}h$

=112km/h

17. Today is Thursday, 9th July 2025. What day of the week will it be on 5th September?

July = 31-9

August =31

September = 9

22+31+9=62

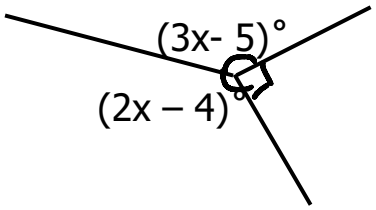
Thursday +62= ……..(finite 7)

4+62=66

66÷7= 9 rem 3

Wednesday

18. Find the size of the angle x.



Angles at the center = 360°

(2x -4 + 90 + 3x – 5)° = 360°

5X+81 =360

5X 81-81=360-81

5X =279

$\frac{5x}{5} = \frac{279}{5}$

X =55.8

19. A trader made a loss of 9% on a dozen of note books he sold at sh. 10,125 each. Find the unit cost of each book.
The selling price= sh. 10125x12

=sh. 121,500

Cost price= $sh. \frac{121500}{81} x100$

=sh. 150,000

Unit cost price =$\frac{sh150000}{12} = sh\ 12{,}500$

20. A minute hand rested at 20 minutes. Find the size of the angle (turn) it made.

$\frac{20}{60} x360°$

= 120°

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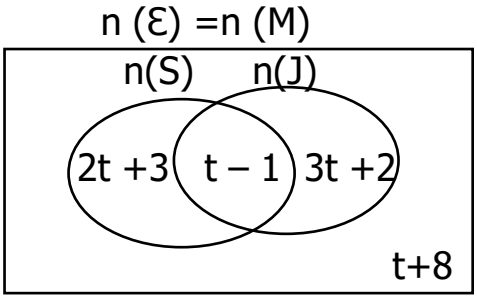
SECTION B: 60 MARKS

There are ***12*** questions in this section.

Answer **all** questions in this section.

Marks for each question is indicated in bracket.

21. In the Bagadisa's birthday party, all candidates were served with mineral water (M). They were served with soda(S) and juice (J) as shown in the Venn diagram below.



a) If the number of those who took mineral water only was twice the number those who took all three drinks, find the value of t.
(02 marks)

$$t + 8 = 2(t - 1)$$
$$t + 8 = 2t - 2$$
$$t + 8 - 8 = 2t - 2 - 8$$
$$t - 2t = 2t - 2t - 10$$
$$-t = -10$$
$$t = 10$$

b) A pupil was picked at random, find the probability that a pupil picked took only two type of drinks. (02 marks)

Probability = $\frac{n(E)}{n(s)}$

n(E)= 2t +3 + 3t + 2

=2x10 + 3 +3x10+2

=20+3+30+2

=55 pupils

n(S)= 55 + t -1 + t + 8

=55 + 10-1+10+8

=55+9+18

=82

Probability = $\frac{55}{82}$

22. Nakalyango sells mangoes in heaps of five and eights. A heap of five mangoes costs sh 1,500 and a heap of eights costs sh.2, 000. She had 18 heaps of fives and the remaining in heaps of eights. She sold all at sh 113,000.
Find the total of mangoes she sold (04 marks)

Cost for the heap of five.

18 x sh. 1500= sh. 27000

Remaining money.

Sh. 113,000- sh. 27,000= sh.86,000

Heaps of eights.

Sh. 86, 000 ÷ sh. 20,000

43 heaps.

Number of mangoes in heap of eights

43 x 8=344

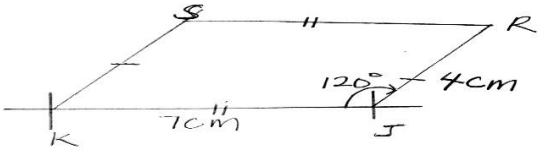
Number of mangoes in heap of fives

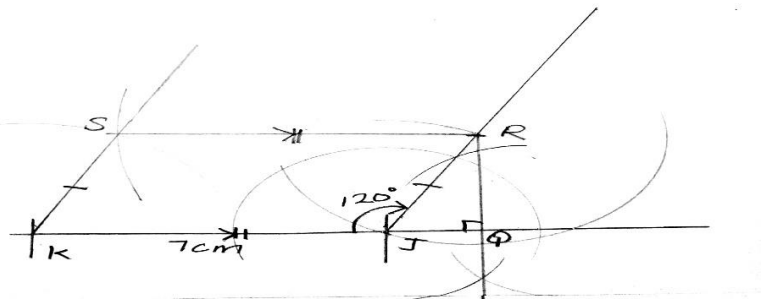
18 x 5 = 90

Total number of mangoes sold.

344 + 90= 434

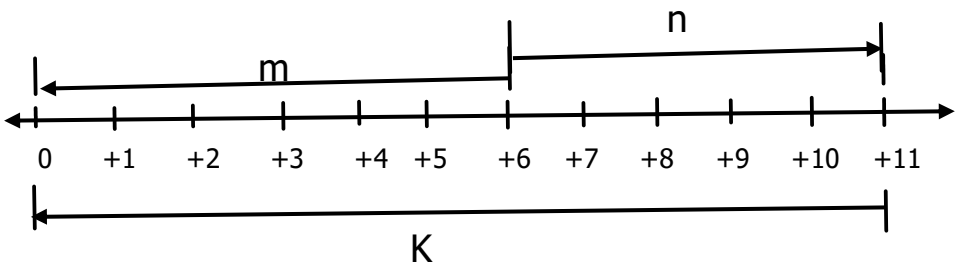
23. Using a pair of compasses, ruler and a sharp pencil only
a) Construct a quadrilateral KJRS where KJ =RS = 7cm and JR =KS = 4cm and the angle KJR =120°.
(04 marks)





b) Drop a perpendicular line from R to meet line KJ at Q and measure height of the quadrilateral ……3.5cm……. (01 marks)

24. The figure below shows a number line. Study it carefully and answer the questions that follow.



a) Simplify: m – n *(02 marks)*

(-6)- (+5)
= -6 – 5
= -11

b) Write the mathematical sentence for the number line above *(02 marks)*

-6 – 5 = -11

25. a) solve for w: 2(w+1) – 3(2w-1) = -3 (02 marks)

2w + 2 – 6w + 3 = -3

2w – 6w +2 + 3= -3

-4w +5 = -3

-4w +5 – 5 = - 3 – 5

-4w = -8

$\frac{-4w}{-4} = \frac{-8}{-4}$

W = 2

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b) Work out the value of m: $\frac{1}{4}m + 5 = 3(finite\ 7)$ (03 marks)

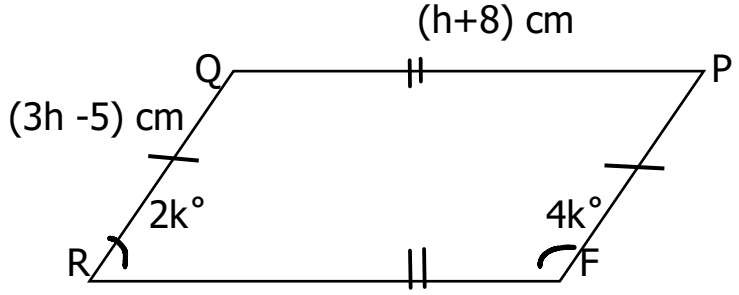
$\frac{1}{4}m\ x\ 4 + \frac{5}{1}x4 = \frac{3}{1}x4(finite\ 7)$

M + 20 – 20 =12 – 20

M = (12+7)-20=……

M = (19 + 7) -20 = <u>6(finite 7)</u>

26. Use the figure below to answer the questions that follow.



(2h +3) cm

a) Find the value of k. (02 marks)

Two base angles of a parallelogram add up to 180°

2k + 4k = 180

6k = 180

$\frac{6k}{6} = \frac{180}{6}$

<u>k = 30</u>

b) Work out the size of angle QPF (02 marks)

2k°

2 x 30°

= <u>60°</u>

c) Find the perimeter of the figure QPRF (03 marks)

(h + 8)cm + (2h + 3) cm + (3h – 5)cm+(3h-5)cm

But (h + 8)cm = (2h +3)cm

h + 8 = 2h + 3

h-h +8 -3=2h-h+3-3

5 = h

Therefore; (5 +8)cm+(2x5+3)cm+2(3x5-5)cm

(13+13+20+20)cm

<u>66cm</u>

27. A car that is 300metres long covered a distance of 53.7km from 12:30 p.m. to 2:00 p.m. Calculate the speed of the car in m/s. (04 marks)

Changing 53.7km to metres

Ikm = 1000metres

=53.7 x 1000m

= 53700m

Total distance = 53700

+ 300

54000

Duration = HRS minutes

12+~~2~~ 00 +60

- 12 30

2 hrs 30mins

Changing to seconds = 2 x 60 x 60 + 30 x 60

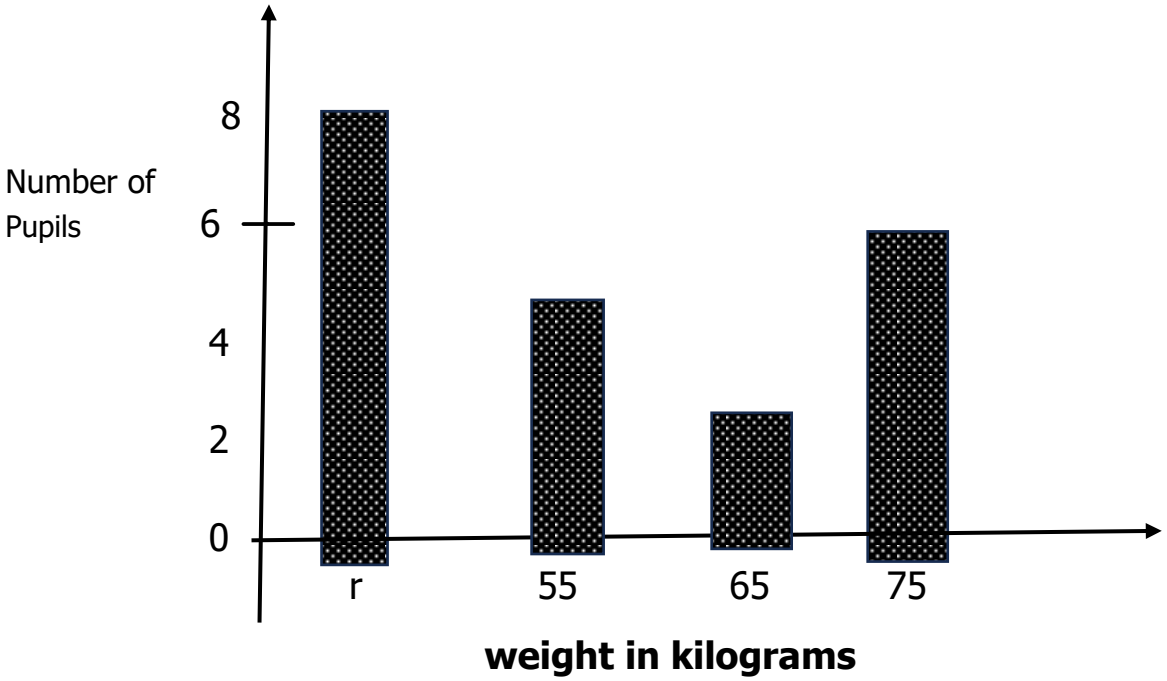
= 900 seconds

Speed in m/s = distance ÷ time

$= \frac{54000}{9000}$

= 6m/s

28. The graph below shows the number of pupils who were measured during nutritional day. Use it to answer the questions that follow.



a) Find the number of pupils who were measured. (02 marks)

8 + 5+3+6= 21 candidates

b) The mean weight of all pupils measured was 60, find the value of r.

(03 marks)

Mean x number = sum of all data

60 x 21 = 8 x r + 5 x 55 + 65 x 3+75x6

1260= 8r + 275 + 195+450

1260 = 920 + 8r

340= 8r

$\frac{340}{8} = \frac{8r}{8} = 42.5$

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29. The sum of first three consecutive odd numbers is 99.

a) Find the largest number. (04 marks)

Let the first odd number be m

1st	2nd	3rd	Sum
m	M+2	M+4	99

m + m+2+ m+4=99

3m + 6 =99

3m + 6 -6 = 99 – 6

3m = 93

$\frac{3m}{3} = \frac{93}{3}$

M =31

The largest number

= m + 4

= 31 + 4

=35

30. Find the deposit needed in the bank to make an amount of sh.752,

000 in 4months at a rate of $13\frac{1}{3}\%$ per annum. (05 marks)

I = P X R X T

AMOUNT	RATE	TIME
Sh. 752,0000	$13\frac{1}{3}\% = \frac{40}{300}$ $= \frac{2}{15}$	$\frac{4}{12} = \frac{1}{3} years$

But I = A – P

A – P = P X R X T

Sh. 752,000 – P = P X $\frac{2}{15}$ $X \frac{1}{3}$

Sh. 752,000 – P = $\frac{2P}{45}$

Sh. 752,000 x 45 – 45p = 2p

Sh. 3384000 -45p +45p = 2p + 45p

Sh. 3384000=47p

$sh. \frac{3384000}{45} = \frac{47p}{47}$

Sh. 720,0000 = p

So sh. 720,000 is needed.

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31. A circular flower garden was to be fenced using 11 poles at an interval of 4metres apart.

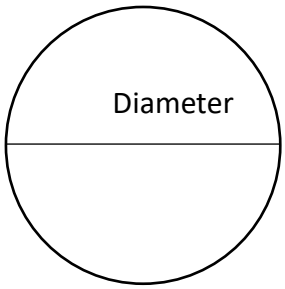
a) Find the perimeter of the garden. (02 marks)

Perimeter = interval x number of poles

= 11 x 4 metres

=44 metres

b) Calculate the radius of the flower garden. (use $\pi = \frac{22}{7}$) (03 marks)



Circumference of a full circle = its perimeter

perimeter = πd

44cm = $\frac{22}{7} x\ d$

$.44cm\ x\ 7 = \frac{22}{7} x\ 7\ x\ d$

$\frac{44cm\ x\ 7}{22}$ = d

14cm = diameter

$\frac{14cm}{2} = radius$

7cm = radius

32. a) Evaluate $123_{five} \times 112_{five}$ (03 marks)

$$
\begin{array}{r}
1\ 2\ 3\ \text{five} \\
\times\ 1\ 1\ 2\text{five} \\
\hline
1\ 3\ 0\ 1 \\
1\ 2\ 3 \\
+\ 1\ 2\ 3\quad . \\
\hline
1\ 4\ 3\ 3\ 1\ \text{five}
\end{array}
$$

b) Find the value of 2 in 231_{six} (02 marks)

100five	10five	0nes
2	3	1

2 x 100five= 200five

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 0754 742 152/0786 616 884

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