KAMPALA PRIMARY SCHOOLS'
SKYLINE EXAMINATIONS™

P.L.E – 2024

Set 01

MATHEMATICS

Time Allowed: 2 hours 30 minutes

Index No. | | | | | | | | | |

Candidate's Name:.....

Candidate's Signature:.....

School Name:.....

District Name:.....

DO NOT OPEN THIS BOOK LET UNTIL YOU ARE TOLD TO DO SO.

FOR EXAMINERS' USE ONLY

Read the following instructions carefully;

1. The paper has **two** Sections: **A** and **B**.
2. Section **A** has 20 short questions (40 marks).
3. Section **B** has 12 questions (60 marks).
4. Attempt **ALL** questions. All answers to both Sections **A** and **B** must be written in the spaces provided.
5. All answers must be written using blue or black ball-point pen or ink. Only diagrams and graphs work may be done in pencil.
6. Unnecessary alteration of work will lead to loss of marks.
7. Any handwriting that cannot easily be read may lead to loss of marks.
8. Do **not** fill anything in the boxes indicated for examiners' use only.

FOR EXAMINERS' USE ONLY		
Qn. No.	MARK	SIGN
1 – 4		
5 – 8		
9 – 12		
13 – 16		
17 – 20		
21 – 23		
24 – 26		
27 – 29		
30 – 32		
TOTAL		

SECTION A: 40 MARKS

Questions 1 to 20 carry <u>two</u> marks each.

1. Find 0.081 ÷ 0.03

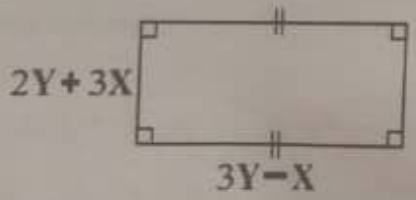
2. Write MCDXCIV in words.

3. Two bells ring at intervals of 25 minutes and 40 minutes respectively. They rang together at 10:40a.m. for the second time. At what time did they ring together at first?

4. If Set **K** = {0, 1, 2, 3}. What number of proper subsets has Set **K**?

5. Given that $2X - 6 = 14$
   Find $4X \div 5$

6. Work out the perimeter of the figure below.



7. Budende Primary School has 1085 pupils. If the girls are 786. How many more girls than boys are in the school?

8. Mary and Kate share mangoes in the ratio $^3/_4 : {}^3/_5$. How many mangoes did each of them receive?

9. The bearing of **B** from **A** is 240^0. Find the direction of **A** from **B**.

10. The marked price of a radio is Shs.50,000/=. Mabirizi paid Shs.15,000/= less as a discount for cash. Find the percentage of the cash price for the radio.

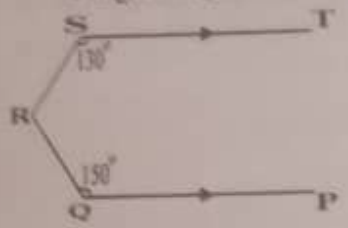
11. In a straight line, Kabazira is the fifth from the right and the seventh from the left. How many children are in the line?	12. The probability that Ali will visit Nairobi is 0.75. What is the chance that he will not visit Nairobi?

13. A bus began on a 360Km journey at 6:30a.m. and reached its destination at 8:00a.m. Find the average speed of the bus.

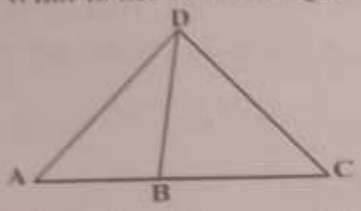
14. Express "Twenty five minutes to Nine" in the evening in twenty four hour clock.	15. What is the complementary angle of: $(3X + 30)^0$

16. Two hundred fifty five mango seedlings were planted in rows. If each row had seventeen seedlings. What number of rows were formed by the seedlings.

25. (a) Given below is a geometrical figure where **PQ** is parallel to **ST**.
Angle **PQR** = 150^0 and angle **TSR** = 130^0. Find the size of angle **QRS**. (2 marks)



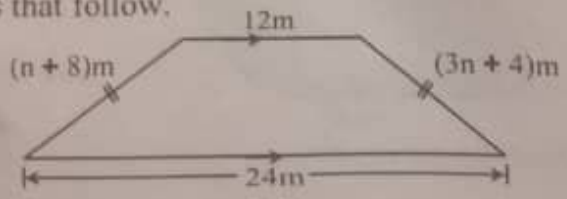
(b) In the figure below, **ABC** is a straight line where **AB** = **BC** = **CD**. Angle **ADB** = 35^0.
What is the size of angle **ADC**? (2 marks)



26. Given that six consecutive even numbers have their median as 65.
(a) Write down all the six even numbers. (4 marks)

(b) What is the range of the numbers? (1 mark)

27. The figure below represents an Isosceles trapezoidal container. Study it and use it to answer the questions that follow.



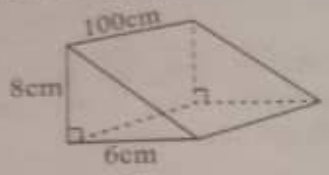
(a) What is the value of n? (3 marks)

(b) Find the perimeter of the figure. (2 marks)

17. The weight of a box containing 100 books is 40Kg. The empty box weighs 5Kg. What is the weight of each book?

18. Express 0.1666... as a common fraction in its lowest term.

19. How much water does the container of the given shape below hold?



20. Calculate the rate of interest at which Shs.60,000/= will generate a simple interest of Shs.6,000/= in 2 years.

SECTION B: 60 MARKS

21. The interior angle of a regular polygon is five times its exterior angle.

(a) Work out the size of the interior angle. (3 marks)

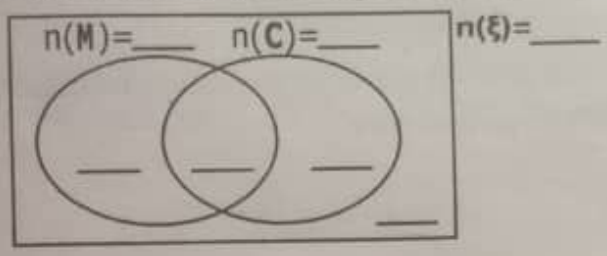
(b) Calculate the total interior angle sum of the polygon. (2 marks)

22. (a) Bulintamira village have 160 more females than males. The males are 30% of the whole population of Bulintamira village. How many female persons are in that village? (3 marks)

(b) If each person in that village was given 250 layers birds by the government of Uganda as *entandikwa* for *Bonna Baggaggawale*. How many birds did the people in that village receive altogether? (2 marks)

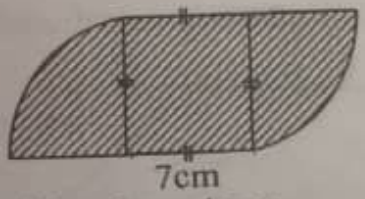
23. In a club of 50 members, a fifth of the members eat meat only n(M). Half of the remainder eat both meat and chicken n(C), 3y eat chicken only while 2y dislike any of the two kinds of foods.

(a) Represent the given information on the Venn diagram below. (3 marks)



(b) Find the number of members who eat meat. (2 marks)

24. **Study the figure below and use it to answer the questions that follow.**



(a) Work out the distance around the given shape. (3 marks)

(b) Calculate the **area** of the given shape. (3 marks)

(c) Work out area of the above container. (2 marks)

28. Kole owns a store in Kijjo town. He buys different crops from farmers and then sells them as shown in the table below. Use it to answer the questions that follow.

TYPE OF CROP	BUYING PRICE	SELLING PRICE
½ Kg of Rice	Shs.1,000/=	Shs.1,250/=
1Kg of Cowo	Shs.3,800/=	Shs.4,000/=
250gm of Cocoa	Shs.2,000/=	Shs.2,500/=
1Kg of Cotton	Shs.4,500/=	Shs.5,000/=

(a) If Kole sold 5,000Kg of cotton and 1,000Kg of Cowo. What profit did he make? (2 marks)

(b) Kole made a gain of Shs.200,000/= on Cocoa. How many kilograms did he sell? (2 marks)

29. A bus travelling at 75Km per hour took 4 hours to cover part of its journey. The remaining 180Km was covered at a speed of 60km per hour. What is the average speed of the bus for the whole journey? (4 marks)

30. With the help of a ruler, a pencil and a pair of compasses *only*, construct a square **PQRS** where diagonal **PR** = 6cm. (4 marks)

(b) Find the distance around the square. (2 marks)

31. Given that $2y = 2X + 2$, use it to complete the table below. (3 marks)

X	0	____	4	3	____	____
y	____	3	____	____	6	–6

32. On Juma's animal farm $\frac{1}{4}$ of the animals are goats. $\frac{1}{3}$ of the remaining animals are sheep. If the rest of the animals are 100;

(a) How many goats are on the farm? (3 marks)

(b) Find the number of sheep on the farm. (3 marks)

THE SIPRO PRE-PLE SET I 2024

MATHEMATICS

Time Allowed: 2 *Hours* 30 *Minutes*

Index No.	EMIS NO.						Personal No.		
	0	7	8	9	9	1	8	0	69

Candidate's Name: TA[illegible]E

Candidate's Signature: _____

School EMIS No. _____

District ID: _____

READ THE FOLLOWING INSTRUCTIONS CAREFULLY:

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"FOR EXAMINER'S USE ONLY"

For Examiner's Use Only;		

Qn. No	MARKS	INITIALS
1 - 5		
6 - 10		
11 - 15		
16 - 20		
21 - 22		
23 - 24		
25 - 26		
27 - 28		
29 - 30		
31 - 32		
Total		

Please turn over

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8. The volume of a cube is **27cm³**. Work out its total surface area.

$\sqrt[3]{27cm^3} = \sqrt[3]{L}$

$L = 3cm$

$TSA = 6s^2$

$= 6 \times 3 \times 3$

$= 54cm^2$ ✓

9. The probability of electing a boy as a class monitor is $\frac{5}{9}$. If there are **36** girls, how many boys are in the class?

Fraction of girls $= \frac{9}{9} - \frac{5}{9}$

$= \frac{4}{9}$ ✓

Total $= 36 \div \frac{4}{9}$

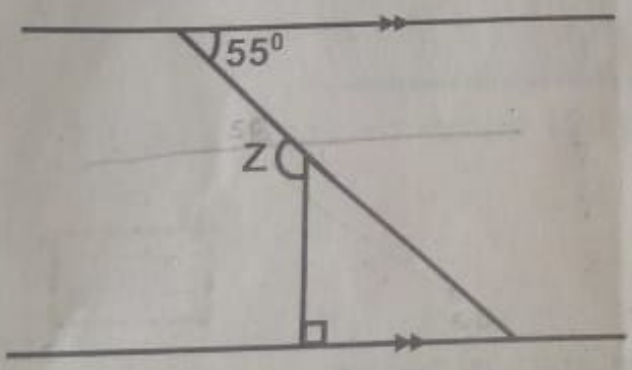
$= 36 \times \frac{9}{4}$

$9 \times 9 = 81$ pupils ✓

No of boys $= 81 - 36$

$= 45$ boys A1 ✓

10. Calculate the size of angle marked **Z** in degrees.



Sum of 2 int $\angle$ = 1 ext $\angle$ M1

$\angle Z = 90° + 65°$

$\angle Z = 145°$ A1 ✓

11. Find the value of **w**: $3w = 4 \pmod 7$

$3w = 4 \pmod 7$

$3w = 4 + 7 \pmod 7$

$3w = 11 \pmod 7$

$2w = 11 + 7 \pmod 7$

$\frac{2w}{2} = \frac{18}{3} \pmod 7$

$w = 6 \pmod 7$ ✓

SECTION A: 40 MARKS

Attempt **all** *questions in this section*
Questions **1** *to* **20** *carry* **two** *marks each.*

1. **Work out:**

$$\begin{array}{r} 214 \\ +\ 53 \\ \hline 267 \end{array}$$ ✓

2. Write **14,019** in words.

Fourteen thousand, nineteen ✓

3. Solve for **e**: $e - 6 = 11$

$e - 6 = 11$

$e - 6 + 6 = 11 + 6$

$e = 17$ ✓

4. Subtract:

days	hours
9	3
- 2	4
6	23 ✓

1day = 24hrs
24 + 3 = 27
27 - 4 = 23

5. Use the diagram below to find the shaded percentage.

$\frac{6}{8} \times \frac{50}{100} = 25$

$3 \times 25 = 75\%$ ✓

6. Given that **set W** = ϕ, how many subsets has set **W**?

No of elements = 0

No of subset = 2^0

$= 2^0$

= 1 subset ✓

7. Complete the sequence;

1, 3, 6, 18, 36, 108 ✓

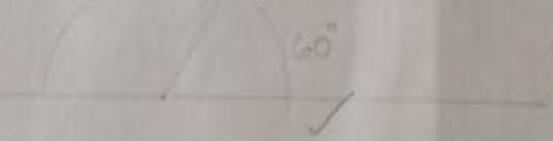
×3 ×2 ×3 ×2 ×3

12. A hawker bought $3\frac{3}{4}$ dozens of exercise books at **sh. 13,500**.
He later sold each exercise book for **sh. 2,200**. Calculate his profit.

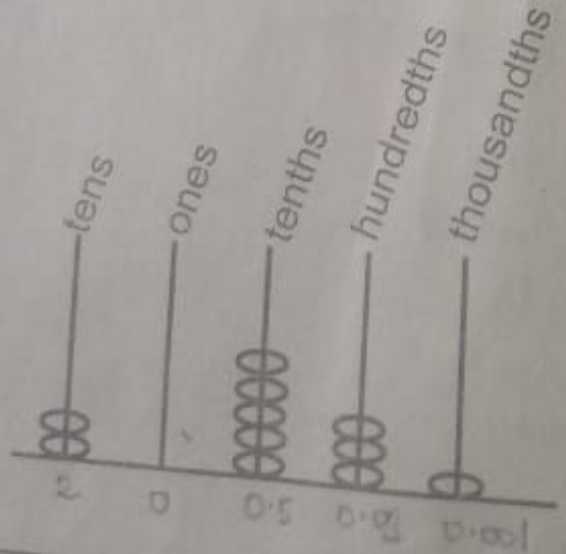
13. Solve and write the solution set for **p**.
$6 \leq 2p < 10$

Solution set for $p = \{3, 4\}$

14. Using a ruler, a pencil and a pair of compasses only, construct an angle of 60^0.



15. Find the number represented on the abacus below.

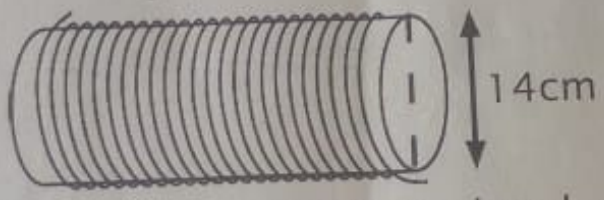


$20.000 + 0.500 + 0.030 + 0.001 = 20.531$

16. A science quiz which ended at **4:15 p.m.** took **90** minutes. At what time did it start?

17. Oliva bought a television set at **Ug sh. 2,190,000**. If **one** US dollar costs **Ug sh. 3,650**, how many US dollars did she pay?

18. In the diagram below, a string is wound round a cylindrical pipe of diameter **14cm**.



If the string is wound up **100** times, how long is the string?

19. **Work out:** $\frac{b^4 \times b^3}{b^5}$

(b) If each full tin of petrol costs **sh. 25,000**, how much money is needed to fill **tank W**?

(07 marks)

1 full tin = sh. 25000 M1

100 full tins = 25000 × 100

= sh 2500000 M1

29(a) Write **394.72** in standard form.

(02 marks)

Solu

394.72 = 3.9472 × 10^2 ✓M1

(b) Solve for **k**: $3^{2k} \times 3^2 = 81$

(02 marks)

$3^{2k} \times 3^2 = 81$ M1 ✓

$3^{2k} \times 3^2 = 3^4$

$2k + 2 = 4$

$2k + 2 - 2 = 4 - 2$

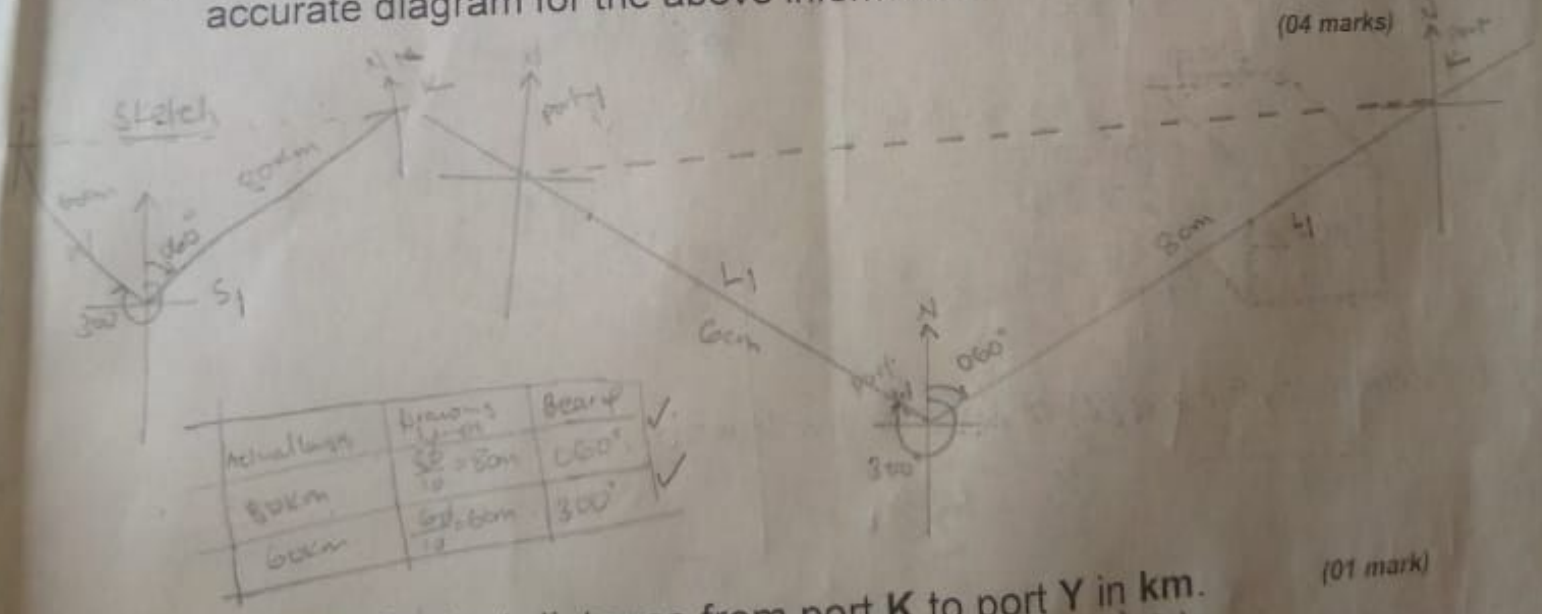
$\frac{2k}{2} = \frac{2}{2}$

$k = 1$ M1 ✓

30. **Port K** is **80km** from **port W** on a bearing of **060°**. **Port Y** is **60km** from **port W** on a bearing of **300°**.

(a) Using the scale drawing of **1cm** to represent **10km**, draw an accurate diagram for the above information.

(04 marks)



Actual	Drawn	Bearing
80km	8cm	060°
60km	6cm	300°

(b) Find the shortest distance from port **K** to port **Y** in **km**.

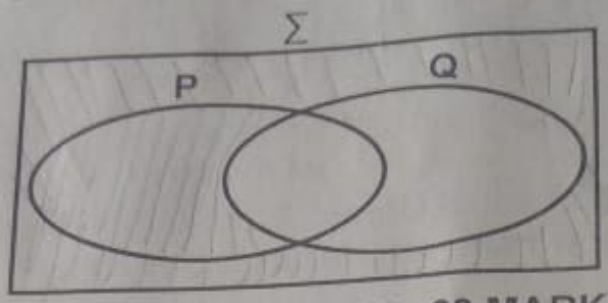
(01 mark)

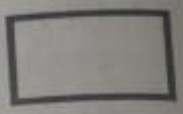
12.2 ± 0.1

Shortest distance = 12.2 × 10

= 122 km ✓

20. Shade **set Q** complement in the figure below.





SECTION B: 60 MARKS

*Attempt **all** questions in this section.*

*Marks for **each part** of the question are **indicated** in the brackets.*

21. Babirye bought the following items from the shop:
    - 2kg of cowpeas at sh. 4,000 per kg.
    - 12 oranges at sh. 1,500 for every 4 oranges.
    - 2,500g of rice at sh. 6,000 per kg.
    - watermelons at sh. 10,000.

(a) Work out her total expenditure. **(04 marks)**

Total expenditure
sh 10 000
sh 15 000
sh 4 500
+ sh 5 000
sh 37,500 ✓

(b) If she was given a discount of **5%**, how much did she pay? **(02 marks)**

$\frac{5}{100} \times 37500$

= sh 1875

She pay = sh 37,500 − 1875

sh 35,625 ✓

22. In a class, $33\frac{1}{3}\%$ of the pupils like football, $\frac{2}{5}$ of the remaining pupils like Hockey and the rest like Tennis ball. If **30** pupils like Tennis ball;

(a) Work out the fraction of pupils who like Hockey. **(02 marks)**

Football = $\frac{(3\times33)+1}{3} \div \frac{100}{1}$

$\frac{99+1}{3} \div \frac{100}{1}$

$\frac{100}{3} \div \frac{100}{1}$

$\frac{100}{3} \times \frac{1}{100} = \frac{100}{300}$

$= \frac{1}{3}$

Hockey $= \frac{3}{3} - \frac{1}{3}$

$= \frac{2}{3}$

$\frac{2}{3} \times \frac{2}{5} = \frac{4}{15}$ ✓

Total fraction $= \frac{1}{3} + \frac{4}{15}$

$= \frac{5+4}{15}$

$= \frac{9}{15}$

$\frac{15}{15} - \frac{9}{15} = \frac{6}{15}$

$= \frac{2}{5}$ ✓

(b) Calculate the total number of pupils in the class. **(03 marks)**

Let the no of pupils be y

$\frac{2}{5}$ of $y = 30$

$\frac{2y}{5} = 30$

$\frac{2y}{2} = \frac{30\times5}{2}$

$y = 75$ pupils ✓

23(a) Write the place value of **3** in 321_{five}. **(01 mark)**

321

Five fives ✓

(b) Find the value of **3** in (a) above. **(02 marks)**

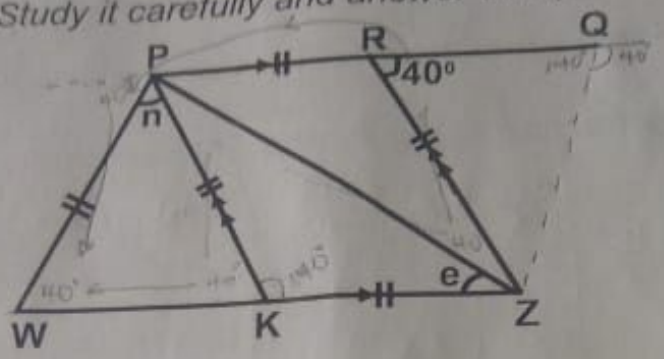
Value $= 3\times5\times5$

$= 75$ ✓

(c) Expand 321_{five} using exponents. **(02 marks)**

$321_{five} = (3\times10^{2})_{five} + (2\times10^{1})_{five} + (1\times10^{0})_{five}$ ✓

24. In the figure below, line **PQ** is parallel to line **WZ** and angle **QRZ = 40°**. *Study it carefully and answer the questions that follow.*



(a) Find the size of angle **e**. *(02 marks)*

$e + e + 140^\circ = 180^\circ$

$2e + 140^\circ - 140^\circ = 180^\circ - 140^\circ$

$\frac{2e}{2} = \frac{40^\circ}{2}$

$e = 20^\circ$ ✓

(b) Work out the size of angle **n**. *(03 marks)*

$\angle n + 40^\circ + 40^\circ = 180^\circ$

$\angle n + 80^\circ = 180^\circ$

$\angle n + 80^\circ - 80^\circ = 180^\circ - 80^\circ$

$\angle n = 100^\circ$ ✓

25.(a) Solve for **b**: $2(b+4) = b+10$ *(02 marks)*

Sol:

$2(b+4) = b+10$

$2b+8 = b+10$

$2b-b+8 = b-b+10$

$b+8 = 10$

$b+8-8 = 10-8$

$b = 2$ ✓

(b) At a supermarket, a basin costs **sh. 3,000** more than a bucket. A saucepan costs **two fifths** of the cost of a bucket. If all items cost **sh. 33,000**, calculate the cost of a bucket. (03 marks)

Bucket	basin	Saucepan	Sum
m	m+3000	2/5 m	sh 33,000

M1

$m + m + 3000 + \frac{2}{5}m = 33000$

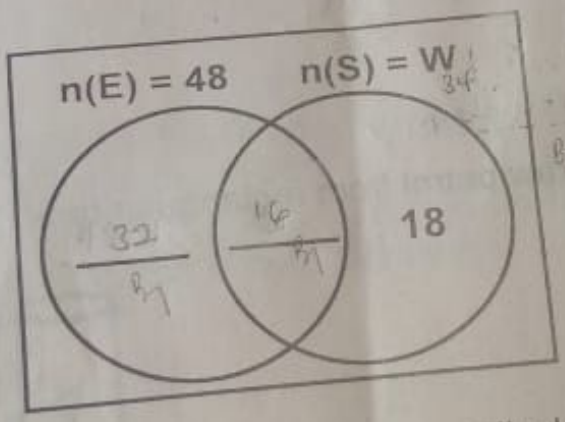
$\frac{5m + 5m + 15000 + 2m}{5} = 33000$

$12m + 15000 = 165000$

$\frac{12m + 15000}{5}$

26. In a group of pupils, **48** like English (E), **W** pupils like Social studies (S). Athird of the pupils who like English also like Social studies and **18** pupils like Social studies only.

(a) Complete the venn diagram below using the information above. (03 marks)



(b) What is the probability of picking a pupil who does not like both subjects? (02 marks)

$n(E) = n(E)\text{only} + n(S)\text{only}$

$= 32 + 18$ M1

$= 50$ pupils

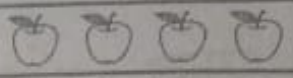
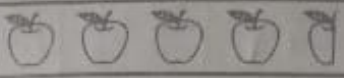
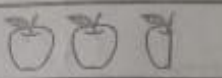
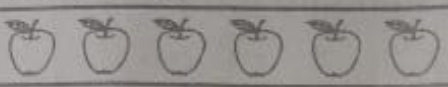
$n(S) = 32 + 16 + 18$

$= 66$ pupils

probability of n(doesn't like both) $= \frac{n(E)}{n(U)}$

$= \frac{50}{66}$ A1

31. The pictograph below represents tomatoes sold in a market per day by Mrs. Ssebuggwawo.

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Note:  represents **10** tomatoes.

(a) How many tomatoes were sold on Thursday? *(01 mark)*

(b) How many more tomatoes were sold on Friday than on Tuesday? *(02 marks)*

(c) Express the number of tomatoes sold on Monday as a percentage of the total number. *(02 marks)*

32(a) Work out: $\frac{0.24 + 0.6}{1.2 \times 0.01}$ *(03 marks)*

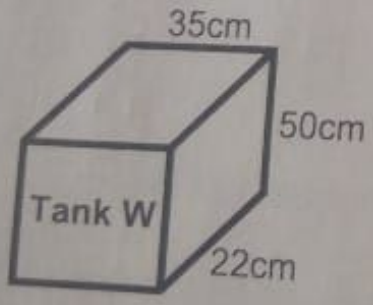
(b) Simplify: $1\frac{1}{6} \times 1\frac{1}{7} \div 2\frac{1}{3}$ *(02 marks)*

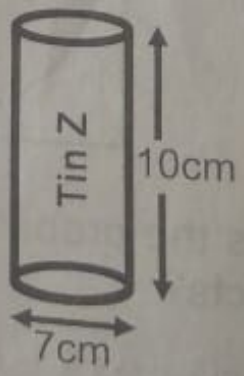
27. A motorist left Bushenyi at **9:45a.m.** and reached Masaka at **11:15 a.m.** at a speed of **60km/hour**. After staying in Masaka Town for **30** minutes, he moved back to Bushenyi using the same route at a speed of **30km/h**.

(a) How far is Masaka from Bushenyi? *(02 marks)*

(b) Calculate the motorist's average speed for whole journey. *(03 marks)*

28. Tin (Z) was used to draw petrol from rectangular tank (**W**) which was full of petrol.





(a) How many full tins (Z) of petrol were drawn from the **tank W**? *(03 marks)*