

THE E-LEARN EXAMINATIONS BOARD

MID TERM I PROGRESS CHECK

2024

MATHEMATICS GUIDE

Time Allowed: 2 hours 15 minutes



Index No.

EMIS No.						Personal No.		

COMPILED: **TR. OCHOLA FAUSTNE 0789452535**

TR. WALYAULA SILVER 0786678414

TR. MULINDWA HAKIM 0701564376

Read the following instructions carefully:

1. Do not forget to write your **school** or **district name** on the paper.
2. This paper has two sections: **A** and **B**. Section **A** has **20** questions and section **B** has **12** questions. The paper has **14** printed pages altogether.
3. Answer **all** questions. **All** working for both sections **A** and **B** must be shown in the spaces provided.
4. **All** answers **must** be written using a **blue** or **black** ball point pen or ink. Any work written in pencil will **not** be marked.
5. Unnecessary **changes** in your work and handwriting that cannot be read easily may lead to **loss of marks**.
6. Do not fill anything in the table indicated: **"For Examiners' use only"** and boxes inside the question paper

FOR EXAMINERS' USE ONLY		
Qn. No.	MARKS	EXR'S NO.
1 – 5		
6 – 10		
11 – 15		
16 – 20		
21 – 22		
23 – 24		
25 – 26		
27 – 28		
29 – 32		
TOTAL		

SECTION A: 40 MARKS

Answer **all** questions in this section.

Questions **1** to **20** carry two marks each.

1. Work out: $46 + 25$

$$\begin{array}{r} 46 \\ + 25 \\ \hline 71 \end{array}$$

2. Write 2024 in words.

Two thousand, twenty-four.

3. Find the sum of the next two numbers in the sequence.

1, 3, 5, 7, 9, 11

+2 +2 +2 +2 +2

$$\begin{array}{l} 1+2=3 \\ 3+2=5 \end{array} \quad \begin{array}{l} 5+2=7 \\ 7+2=9 \\ 9+2=11 \end{array} \quad \text{sum} = \underline{9 + 11 = 20}$$

4. Solve for **e**: $1 + 3e = 10$

$$\begin{array}{l} 1+3e=10 \\ 1-1+3e=10-1 \end{array} \quad \begin{array}{l} 3e=9 \\ 3_1 3_1 \end{array} \quad \underline{e=3}$$

5. Given that $R=\{a,b,c,d\}$. Find the number of subsets in set R.

$$\begin{array}{l} R = \{a, b, c, d\} \\ \text{Number of subsets} \\ = 2^n \end{array} \quad \begin{array}{l} 2^4 \\ 2 \times 2 \times 2 \times 2 \\ 4 \times 4 \\ = \underline{16 \text{ subsets}} \end{array}$$

6. The cost of 2 mangoes is Shs. 1200. what is the total cost of 5 similar mangoes?

2 mangoes \longrightarrow Shs. 1,200

1 mango \longrightarrow Shs. $\frac{1,200}{2}$

5 mangoes \longrightarrow Shs. 600×5
= Shs. 3,000

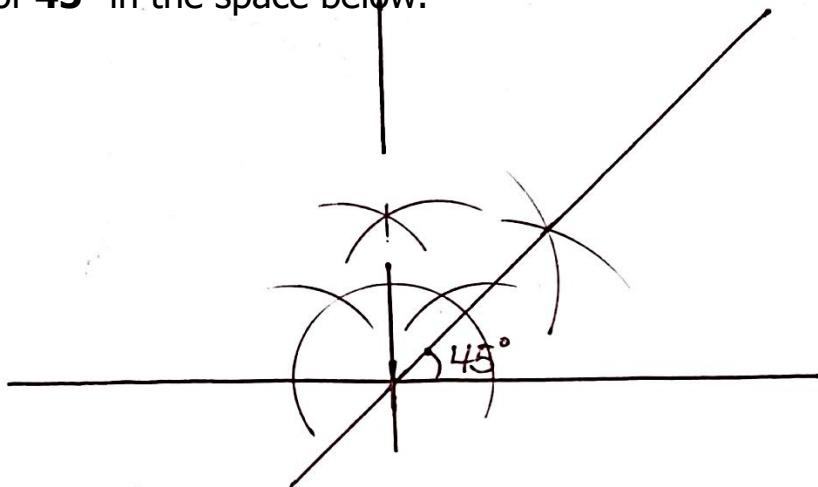
7. Simplify: $3a + a - a$

$$3a + a - a$$

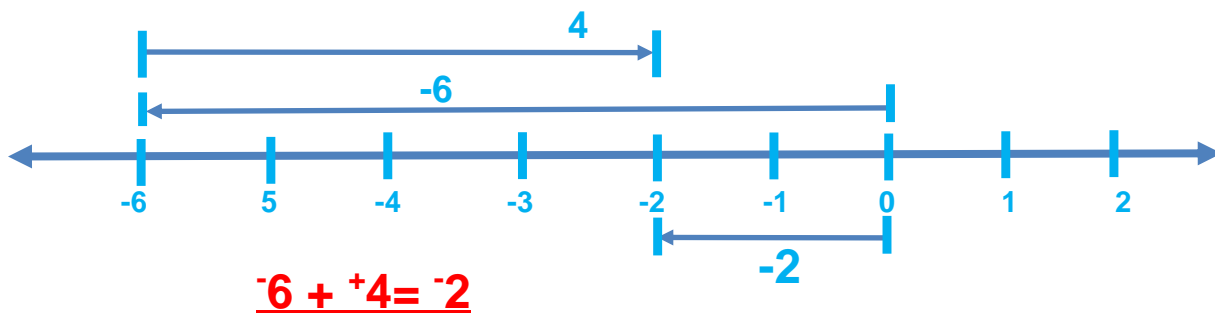
$$4a - a$$

$$\underline{3a}$$

8. Using a ruler, a sharp pencil and a pair of compasses only, construct an angle of 45° in the space below.



9. Workout : $-6 + +4$ using a number line.



10. Tr. Emma's daughter weighs **47kg**. Express his daughter's age in Roman numerals.

$$47 \text{ kg} = (40 + 7) \text{ kg}$$

$$(XL \quad VII) \text{ kg}$$

$$\underline{\underline{XLVII \text{ kg}}}$$

11. The following are the marks scored by Sarah in end of term exams. 20,60,55,45 and 65. Find the range of her marks.

$$20, 45, 55, 55, 60$$

$$\text{Range} = \text{highest} - \text{lowest}$$

$$(65 - 20) \text{ marks}$$

$$\text{Range} = \underline{\underline{45 \text{ marks}}}$$

12. A dice is tossed once. What is the probability of showing up a square number?

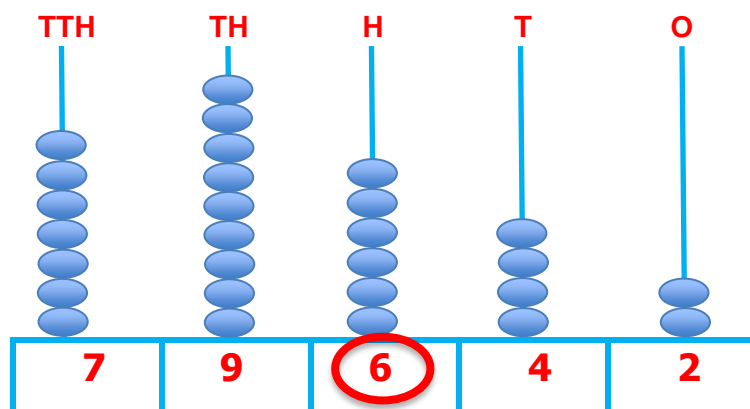
$$\text{Possible outcome} = \{1, 4\}$$

$$\text{Sample space} = \{1, 2, 3, 4, 5, 6\}$$

$$\text{Probability} = \frac{n(E)}{n(SS)}$$

$$\text{Probability} = \underline{\underline{\frac{2}{6}}}$$

13. What is the place value of 6 in 79642 using an abacus.



Hundreds

14. Round off **5.467** to the nearest tenths.

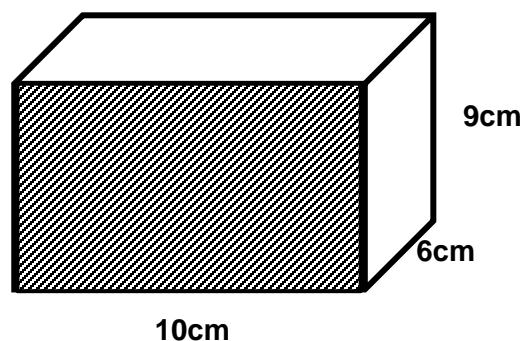
$$\begin{array}{r} \text{O} \quad \text{T}^{\text{th}} \quad \text{H}^{\text{th}} \quad \text{TH}^{\text{th}} \\ 5 . 4 \quad 6 \quad 7 \\ + 0 . 1 \quad \quad \quad \\ \hline 5 . 5 \quad \quad \quad \\ \hline \end{array}$$

5.467 \approx 5.5

15. A P.6 Pupil washed his vest. It took 5 minutes to dry under sunshine. How long will **3 similar vests** take if they are washed and dried under the same sunshine.

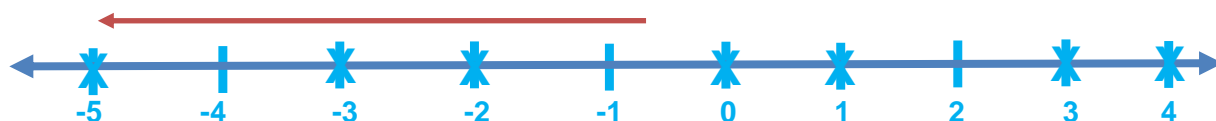
They will take 5 minutes.

16. Find the area of the shaded region on figure below.



Area of shaded part
= L x h
= (10 x 9)cm²
= 90 cm²

17. Arrange **-5, +4, -3, 0, -2, +1, +3** in descending order



+4, +3, +1, 0, -2, -3, -5

18. The distance between Soroti and Mbale is **120km**. A driver took **3hours** to cover it while traveling. Calculate his average speed.

$$\begin{array}{lcl}
 \text{Distance} & = 120\text{km} & \\
 \text{Time} & = 3\text{hrs} & \\
 \text{Average speed} & = \frac{\text{T.D.C}}{\text{T.T.T}} & \\
 & & = \left[\frac{120^{40}}{3_1} \right] \text{Km/hr} \\
 & & = \underline{\underline{40\text{Km/hr}}}
 \end{array}$$

19. Change **240** minutes into hours

$$\begin{array}{lcl}
 60 \text{ minutes} & = 1 \text{ hour} & \\
 240 \text{ minutes} & = \left[\frac{240^4}{60_1} \right] \text{hours} & \\
 & = \underline{\underline{4 \text{ hours}}} &
 \end{array}$$

20. A tourist from USA entered Uganda with \$8000. He changed it to Uganda shillings at the rate of Ushs.3700 per US\$.1. How much did he get in Uganda shillings?

$$\begin{array}{lcl}
 \text{Us. dollar } 1 & \longrightarrow & \text{Ush. } 3,700 \\
 \text{Us. Dollar } 8,000 & \longrightarrow & \text{Ush. } 8,000 \times 3,700 \\
 & & = \underline{\underline{\text{Ush. } 29,600,000}}
 \end{array}$$

SECTION B: 60 MARKS

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

Marks for each question are indicated in brackets.

21. (a) workout: $321_{\text{five}} - 43_{\text{five}}$ (02marks)

$$\begin{array}{lcl}
 \begin{array}{r}
 {}^2\text{3} \quad {}^2\text{1} \quad 1_{\text{five}} \\
 - \quad 4 \quad 3_{\text{five}} \\
 \hline
 \underline{\underline{2 \quad 2 \quad 3_{\text{five}}}}
 \end{array} & \parallel & \begin{array}{l}
 5 + 1 = 6-3 \\
 = 3 \\
 5 + 1 = 6-4 \\
 = 2
 \end{array} & \parallel & \underline{\underline{2 - 0 = 2}}
 \end{array}$$

(b) Given that $203_y = 35_{\text{ten}}$. Find base y

(02marks)

$$2^2 0^1 3^0_y = 35$$

$$(2xy^2) + (0xy^1) + (3xy^0) = 35$$

$$2y^2 + 0 + 3 \times 1 = 35$$

$$2y + 3 = 35$$

$$2y^2 + 3 - 3 = 35 - 3$$

$$\frac{2y^2}{2} = \frac{32}{2}$$

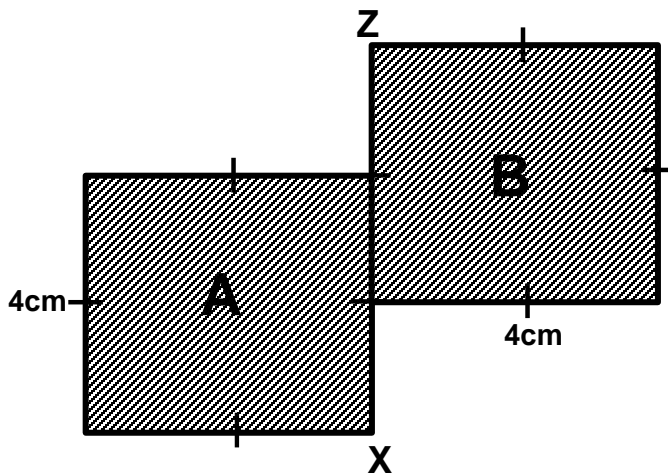
$$y^2 = 16$$

$$\sqrt{y^2} = \sqrt{16}$$

$$y = 4$$

y is base four

22. Below are two equal squares **A** and **B**:



(a) Calculate the area of square **A**

Area of A

$$= S \times S$$

$$= (4 \times 4)\text{cm}^2$$

$$= \underline{16 \text{ cm}^2}$$

(02 marks)

(b) Calculate the total area of the figure.

(02 marks)

Total Area

$$= 16\text{cm}^2 \times 2$$

$$= \underline{32 \text{ cm}^2}$$

(c) Find the length of line **XZ**

$$= 4\text{cm} + \frac{4}{2}$$

$$= 4\text{cm} + 2\text{cm}$$

$$= \underline{6\text{cm}}$$

(02 marks)

23. At Emirates P/S, two bells are used to change lessons for lower and upper sections which are rang at intervals of 50 minutes and 60 minutes respectively.

- (a) After how many minutes will the two sections hear the bell for break at the same time? (03 marks)

$$M_{50} = \{50, 100, 150, 200, 250, 300, \dots\}$$

$$M_{60} = \{60, 120, 180, 240, 300, \dots\}$$

Duration = 300 minutes

METHOD 2

2	50	60
2	25	30
3	25	15
5	25	5
5	5	1
	1	1

2X2X3X5X5

= 300

After 300 minutes

- (b) If the two sections usually go out for break at 10:00am, at what time will they be out again at the same time? (02 marks)

$$\begin{array}{lcl}
 60\text{mins} = 1 \text{ hour} \\
 300\text{mins} = \frac{300}{60} \\
 \quad = 5 \text{ hours}
 \end{array}$$

Hrs	mins	Hrs	mins
10	00	15	00
+ 5	00	-12	00
15	00	03	00

They will ring together again at 3:00pm

(c) List down all the factors of 6. (02 marks)

$$F_6 = 6 \div 1 = 6 \quad 6 \div 2 = 3 \quad 6 \div 3 = 2 \quad 6 \div 6 = 1$$

$$\underline{F_6 = \{1, 2, 3, 6\}}$$

24. (a) Divide: $75 \div 3$

(02 marks)

$$\begin{array}{r} \underline{60}^{20} + \underline{15}^5 \\ 3 \\ 20 + 5 \\ = \underline{25} \end{array}$$

METHOD 2

$$\begin{array}{r} \underline{75}^{25} \\ 3 \\ = \underline{25} \end{array}$$

(d) Work out: 123×12

(02 marks)

	1	2	3	
0	0	0	0	
0	1	2	3	1
0	0	0	0	
1	2	4	6	2
	4	7	6	

$$= \underline{1,476}$$

METHOD 2

$$\begin{aligned} 123 \times 12 &= (123 \times 10) + (123 \times 2) \\ &= 1230 + 246 \\ &= \underline{1,476} \end{aligned}$$

25. Assimwe went shopping and bought the following items.

2kg of sugar at Shs. 4000 per kilogram

3kg of Rice at Shs. 3200@

2 loaves of bread at Shs. 2000 a loaf

$\frac{1}{2}$ kgs of meat at Shs. 6000 per kilogram.

(a) Calculate her total expenditure

(05 marks)

SUGAR

$$= \text{Shs. } 4000 \times 2$$

$$= \underline{\text{Shs. } 8,000}$$

RICE

$$= \text{Shs. } 3200 \times 3$$

$$= \underline{\text{Shs. } 9,600}$$

MEAT

$$= \text{Shs. } 6000 \times \frac{1}{2}$$

$$= \underline{\text{Shs. } 3,000}$$

BREAD

$$= \text{Shs. } 2000 \times 2$$

$$= \underline{\underline{\text{Shs. } 4,000}}$$

TOTAL EXPENDITURE

$$\text{Shs. } 8,000$$

$$\text{Shs. } 9,600$$

$$\text{Shs. } 4,000$$

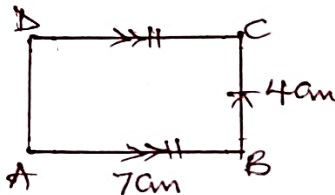
$$+ \underline{\underline{\text{Shs. } 3,000}}$$

$$\underline{\underline{\text{Shs. } 24,600}}$$

26. Using a ruler, a pencil and a protractor only.

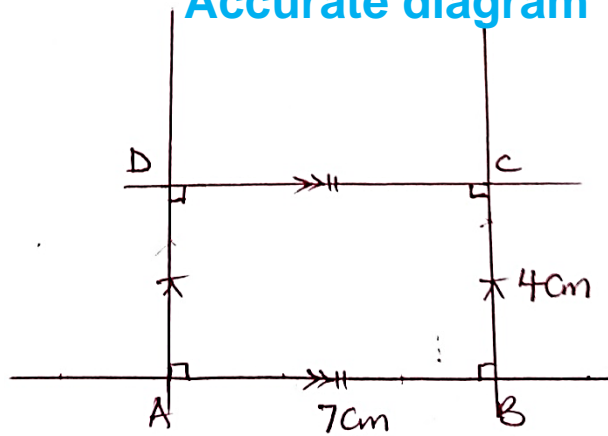
(a) Draw a rectangle ABCD where AB = 7cm and BC = 4cm

Sketch



Accurate diagram

(04 marks)



(b) Calculate the perimeter of the rectangle ABCD above. (02 marks)

$$\text{Perimeter} = L + W + L + W$$

$$= (7 + 4 + 7 + 4)\text{cm}$$

$$= \underline{\underline{22\text{cm}}}$$

27. At Kampala Angels Primary school, $\frac{1}{5}$ of the pupils are boys and 300 are girls.

(a) What is the fraction of the girls in the school? (02marks)

$$1 - \frac{1}{5}$$

$$\frac{5}{5} - \frac{1}{5}$$

$$\frac{5-1}{5}$$

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

- (b) Find the total number of pupils at Kampala Angels primary school
(03 marks) **let the total number be k**

$$\begin{array}{rcl}
 4k & \longrightarrow & 300 \text{ pupils} \\
 1k & \longrightarrow & 75 \times 300 \text{ pupils} \\
 & & - 41 \\
 5k & \longrightarrow & (75 \times 5) \text{ pupils} \\
 & & = \underline{\underline{375 \text{ pupils}}}
 \end{array}$$

28. (a) Expand 2345 using exponents. (02 marks)

10^3	10^2	10^1	10^0
2	3	4	5

$$\underline{\underline{(2 \times 10^3) + (3 \times 10^2) + (4 \times 10^1) + (5 \times 10^0)}}$$

- (b) What number has been extended to give; $7000 + 600 + 70 + 8$?

$$7000 + 600 + 70 + 8 \quad (02 \text{ marks})$$

7000

600

70

+ 8

7,678

- (c) What is the value of 3 in 2345? (01 mark)

TH	H	T	O
2	3	4	5

\downarrow
 3×100
 $= 300$

29. The following are the marks scored by charity in mid term Exams in primary six class.

50, 65, 70, 35, 40. Calculate the;

(a) range (01 marks)

$$\begin{aligned} \text{Range} &= H - L \\ &= (70 - 35) \text{ marks} \\ &= \underline{\underline{35 \text{ marks}}} \end{aligned}$$

(b) median (02 marks)

35, 40, 50, 60, 70

Median is 50 marks

(c) Average mark (02 marks)

$$\begin{aligned} \text{Average} &= \frac{\text{sum of items}}{\text{Number of items}} \\ &= \frac{35+40+50+65+70}{5} \\ &= \frac{260}{5} \\ &= \underline{\underline{52 \text{ marks}}} \end{aligned}$$

30. Given that $a=6$, $b=4$ and $c=2$, Find the value of

(a) $a + b + c$ (01 marks)

$$\begin{aligned} a + b + c &= 6 + 4 + 2 \\ &= 10 + 2 \\ &= \underline{\underline{12}} \end{aligned}$$

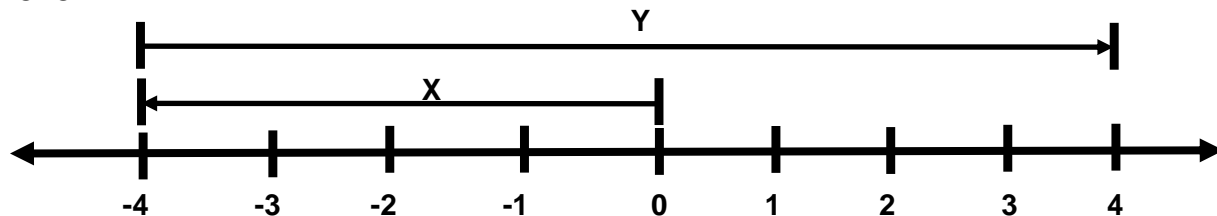
(b) $a(b+c)$ (02 marks)

$$\begin{aligned} a(b+c) &= 6 \times (4+2) \\ &= 6 \times 6 \\ &= \underline{\underline{36}} \end{aligned}$$

(c) $\frac{a+b}{c}$ (02 marks)

$$\begin{aligned} \frac{a+b}{c} &= \frac{6+4}{2} \\ &= \frac{10}{2} \\ &= \underline{\underline{5}} \end{aligned}$$

31. Study the number line below carefully and answer the questions that follow.



(a) Write the integers represented by the letter z (01 mark@)

(i) $x = -4$

(ii) $y = +8$

(iii) $z = +4$

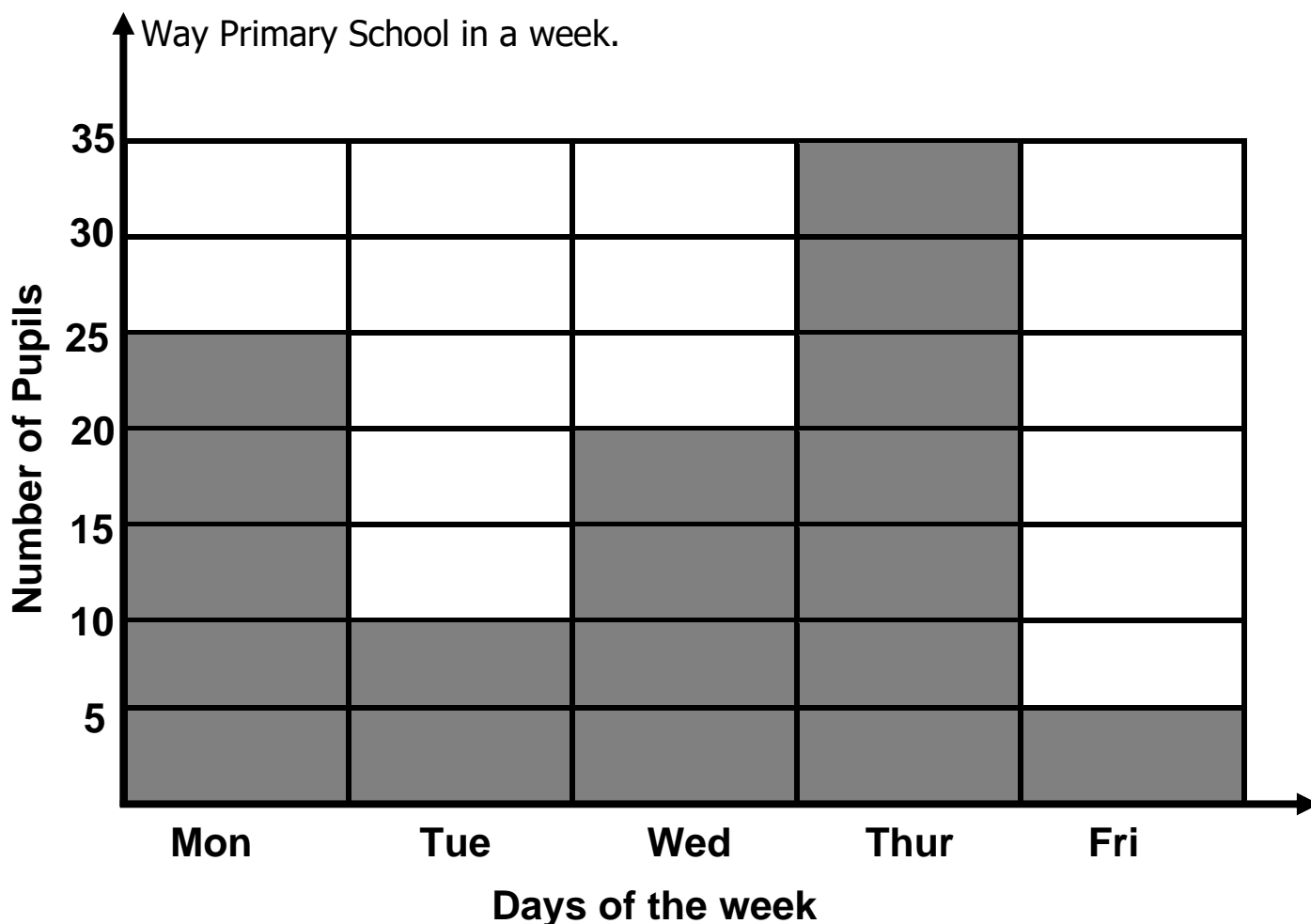
(b) Write the mathematical statement for the above number line

$$x + y = z$$

(02 marks)

$$\underline{-4 + +8 = +4}$$

32. The bar graph below shows the attendance of P.6 Pupils of Bright Way Primary School in a week.



(a) On which day was the least attendance recorded?

(01 mark)

Friday

(b) How many more pupils attended on Thursday than Wednesday?

(02 marks)

= (35 - 20) more pupils

= 15 more pupils

(c) How many pupils were absent for the whole week?

(02 marks)

= (10 + 25 + 15 + 0 + 30) pupils

= (35 + 45) pupils

= 80 pupils

END

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In response to the challenges faced by educators and learners alike during the pandemic, the board swiftly pivoted to provide comprehensive learning materials tailored to the unique demands of remote education. Understanding that teachers needed support in delivering lessons online, the board developed a range of educational resources and materials, covering various subjects and grade levels. These resources were made freely available to both teachers and learners who had downloaded the E-Learn App.

The E-Learn app was a user-friendly platform designed to streamline the delivery of teaching materials and resources. The app empowered teachers to access a wealth of educational content, including lesson notes, daily and weekly work, instructional videos, and interactive learning activities, all accessible from the convenience of their devices. This innovative tool not only facilitated remote teaching but also fostered collaboration and knowledge sharing among educators.

As the E-Learn app gained popularity among teachers, the board witnessed a remarkable surge in online engagement and participation. The board continued to invest in the expansion and enhancement of its online offerings. This included the development of interactive assessment tools, virtual classrooms, and personalized learning pathways, all aimed at maximizing children's engagement and learning outcomes in the online environment.

Driven by a commitment to excellence and innovation, the E-Learn Examinations Board has emerged as a leader in the field of online education and assessment. Its pioneering efforts bridged the gap created by the pandemic and laid the groundwork for a more inclusive, flexible, and resilient education system for the future.

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