



NATIONAL TEACHING COUNCIL
GHANA TEACHER LICENSURE EXAMINATION (GTLE)



INDEX NUMBER	
CENTRE NAME	
SIGNATURE	

DATE: 07-05-2021

DURATION: 1 HOUR 30MINS

PAPER 3
NUMERACY

INSTRUCTIONS

This paper consists of two parts, **A** and **B**. Answer all questions in both parts of the question paper.

PART A

Consists of 30 multiple-choice questions, each with four options lettered A to D. Read and evaluate all four answer choices before circling the correct or best answer.

PART B

This part of the paper has **TWO** questions. Answer all the questions in the spaces provided under each question.

[illegible]

PART A
(30 marks)

Answer all the questions

This part consists of 30 multiple-choice questions with four options lettered A to D. Read and evaluate all four answer choices before circling the correct or best answer.

1. A boy sold some lemon fruits at three for GH¢5.00. If his total sales was GH¢ 600.00, how many of the fruits did he sell?
A. 120
B. 200
C. 360
D. 1,000
2. Salome is to fill some boxes with 140 pencils. If each box takes a maximum of 12 pencils, how many boxes will be fully filled?
A. 10
B. 11
C. 12
D. 13
3. Fifty-five percent of the pupils in a class are girls. What is the ratio of the number of girls to the number of boys in the class?
A. 9 : 11
B. 9 : 20
C. 11 : 9
D. 11 : 20
4. Which one of the following fractions lies between $\frac{2}{3}$ and $\frac{3}{4}$?
A. $\frac{3}{5}$
B. $\frac{5}{6}$
C. $\frac{7}{12}$
D. $\frac{5}{6}$
5. A trader allows a 5% discount for cash payment. What will be the discount allowed for a cash payment of GH¢5,600.00?
A. GH¢250.00
B. GH¢280.00
C. GH¢1,120.00
D. GH¢5,320.00
6. A number is to be chosen at random from the set {1, 2, 3, 4, 5, 6}. What is the probability that the number chosen is odd?
A. $\frac{1}{6}$
B. $\frac{1}{3}$
C. $\frac{1}{2}$
D. $\frac{2}{3}$

The table below shows the distribution of ages of students in a class. Use the information to answer questions 7 and 8.

Age (years)	14	15	16	17	18
Number of Students	10	25	7	5	3

7. How many students are in the class?
 - A. 18
 - B. 35
 - C. 45
 - ☒ D. 50
8. What is the median age?
 - A. 14
 - B. 15
 - ☒ C. 16
 - D. 17
9. The average age of 3 girls is 17 years 4 months. The average age of 2 of them is 17 years 3 months. How old is the third girl?
 - A. 16 years 6 months
 - B. 17 years 4 months
 - ☒ C. 17 years 6 months
 - D. 18 years 4 months
10. What is 78,910 correct to the nearest thousand?
 - A. 70,000
 - B. 78,000
 - ☒ C. 79,000
 - D. 80,000
11. A trader buys 7 sheep at GH¢250.00 each and sells them at GH¢300.00 each. Which of the following expressions represents the trader's profit?
 - A. $7(250) - 7(300)$
 - ☒ B. $7(300) - 7(250)$
 - C. $7(250) - 300$
 - D. $7(300) - 250$
12. A rectangular field has dimensions 90m by 20m. How many metres of wire mesh will be needed to fence round the field completely?
 - A. 110m
 - ☒ B. 220m
 - C. 1800m
 - D. 2200m
13. In a class of 30 pupils, 10 are females and the rest are males. What is the chance of picking a male at random from the class?
 - A. $\frac{1}{4}$
 - B. $\frac{1}{3}$
 - ☒ C. $\frac{2}{3}$
 - D. $\frac{3}{4}$

14. The mean score of a group of 20 pupils in a test was 5. When another score was added, the mean score became 7. What was the new score?
 A. 35
 B. 47
 C. 100
 D. 147
15. In a survey involving a sample of 1,200 adults, it was observed that for every 8 adults, 3 were men and 5 were women. How many men were part of the sample?
 A. 150
 B. 450
 C. 720
 D. 750
16. Which one of the following statements is true?
 A. $2^3 = 6$
 B. $2 \times 2 \times 2 \times 2 \times 2 = 2^5$
 C. $3 \times 3 \times 3 \times 3 = 4^3$
 D. $3 + 3 + 3 + 3 = 3^4$

Figure 1 is a plan of the floor of a building. Use the information to answer questions 17 and 18.

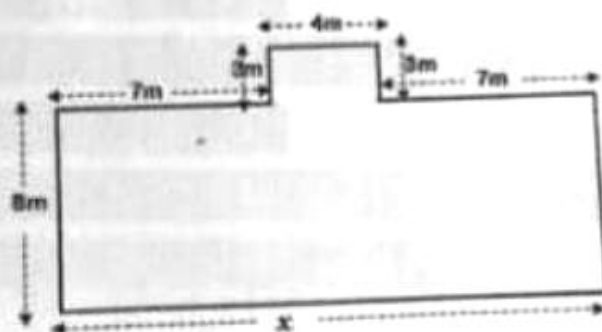


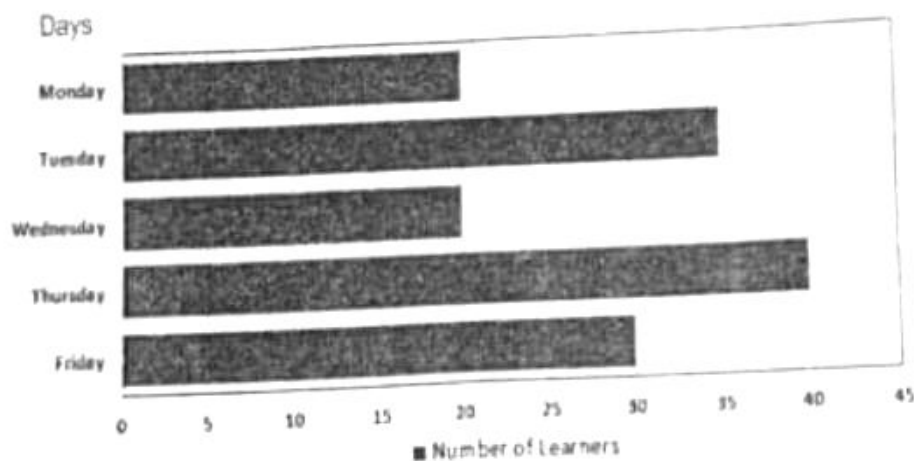
Figure 1

17. What is the value of x ?
 A. 14m
 B. 17m
 C. 18m
 D. 24m
18. What is the distance round the entire floor?
 A. 51m
 B. 52m
 C. 55m
 D. 58m
19. An examination started at 8:05 a.m. and lasted for 2 hours 30 minutes. At what time did the examination end?
 A. 10:40 a.m.
 B. 10:35 a.m.
 C. 10:30 a.m.
 D. 10:25 a.m.

20. The morning session in a school began at 7:25 a.m. with a 20-minute worship. This was followed by three lessons, each 40 minutes long before breakfast. At what time did the breakfast period start?
- A. 9:05 a.m.
 B. 9:35 a.m.
 C. 9:45 a.m.
 D. 10:25 a.m.

21. Evelyn decided to read 7 pages of a story book every day until she completes reading all her story books. If she has three story books each with 42 pages, how many days will she take to finish reading the three books?
- A. 6
 B. 12
 C. 18
 D. 24

The graph below shows attendance during a week for learners in Basic 3. Use the information to answer questions 22 and 23.



22. On which day did **most** of the learners report to school?
- A. Tuesday
 B. Wednesday
 C. Thursday
 D. Friday
23. What is the percentage increase in attendance from Monday to Tuesday?
- A. 20.0%
 B. 33.3%
 C. 50.0%
 D. 75.0%
24. Mrs. Bonney left Accra at 9:05 a.m. and arrived at Mankessim at 12:07 p.m. How long did the journey take?
- A. 2 hours 48 minutes
 B. 2 hours 58 minutes
 C. 3 hours 2 minutes
 D. 3 hours 8 minutes

Use the information below to answer question 25.

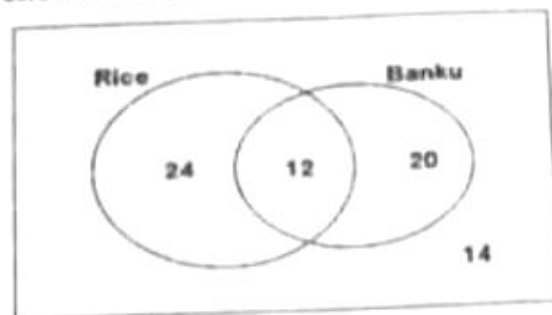
Ama, Baaba, and Caro each has a piece of rope:

Ama's rope is 0.6 metre long.

Baaba's rope is 0.49 metre long.

Caro's rope is 0.295 metre long.

25. Which of the following statements is true about the lengths of their ropes?
- A. Caro's rope is the longest.
 - B. Baaba's rope is the shortest.
 - C. Ama's rope is almost twice as long as Caro's rope.
 - D. Ama's rope is shorter than Baaba's rope.
26. A class of 39 students is taking a field trip to a beach. Each student's bus fare to the beach is GH¢15.00. Which of these expressions can be used to find the total amount, in Ghana cedis, if every student pays the fare?
- A. $(39 + 10) + (39 + 5)$
 - B. $(39 \times 10) + (39 + 5)$
 - C. $(39 + 10) \times (39 + 5)$
 - D. $(39 \times 10) \times (39 \times 5)$
27. The sum of the ages of a set of twins and their four-year old brother is 20 years. How old is each twin?
- A. 4 years
 - B. 5 years
 - C. 8 years
 - D. 16 years
28. Which of the following angles can form the interior angles of a triangle?
- A. $30^\circ, 40^\circ, 50^\circ$
 - B. $30^\circ, 60^\circ, 90^\circ$
 - C. $40^\circ, 40^\circ, 80^\circ$
 - D. $50^\circ, 50^\circ, 45^\circ$
29. Seventy students were asked about their preference for **Banku** or **Rice**. The diagram below shows the result.



How many students did **not** like Banku?

- A. 14
- B. 24
- C. 34
- D. 38

30. A head teacher orders **eight** pointers, **five** markers and **ten** whiteboard erasers. The unit price of the materials are shown in the table below:

Item	Unit Price (GH¢)
Pointer	87.00
Whiteboard marker	3.95
Whiteboard eraser	1.85

Which one of the following expressions gives the **best** estimate of the total cost?

- A. $80(8) + 3(5) + 2(10)$
- B. $80(8) + 4(5) + 2(10)$
- C. $90(8) + 3(5) + 2(10)$
- D. $90(8) + 4(5) + 2(10)$

NUMERACY OBJ.

1.C	11.B	21.C
2.B	12.B	22.C
3.C	13.C	23.D
4.B	14.B	24.D
5.B	15.B	25.C
6.C	16.B	26.D
7.D	17.C	27.B
8.B	18.D	28.B
9.C	19.B	29.D
10.C	20.C	30.D

Q1.

Numeracy

1.

1. A Boy makes rectangular boxes using cards. He made one small box measuring 6cm long, 5cm wide and 8cm tall. He made a bigger one 12cm long, 10cm wide and 16cm tall.

a. How many times as much card did he use to make the big box as used for the small box? Explain

b. Determine the number of times the volume of the big box is as large as the small box.

c. If the card ~~cost~~ cost GHS 1.50 for 10cm by 10cm square card. how much was spent on making the big box.

Q1 a) For small box $L=6\text{cm}$ $W=5\text{cm}$ $H=8\text{cm}$

$$\begin{aligned}\text{Total surface area} &= 2(6 \times 5) + 2(6 \times 8) + 2(5 \times 8) \\ &= 60 + 96 + 80 \\ &= 236\text{cm}^2\end{aligned}$$

For big box, $L=12\text{cm}$ $W=10\text{cm}$ $H=16\text{cm}$

$$\begin{aligned}\text{Total surface area} &= 2(12 \times 10) + 2(12 \times 16) + 2(10 \times 16) \\ &= 240 + 384 + 320 \\ &= 944\text{cm}^2\end{aligned}$$

Comparing the two surface areas, ~~the~~
i.e. $\frac{944\text{cm}^2}{236\text{cm}^2} = 4$.

This implies that he used 4 times as much card for the small box to make the big box.

$$\begin{aligned}\text{b) Volume of small box} &= 6 \times 5 \times 8 \\ &= 240\text{cm}^3\end{aligned}$$

$$\begin{aligned}\text{Volume of big box} &= 12 \times 10 \times 16 \\ &= 1920\text{cm}^3\end{aligned}$$

$$\frac{\text{Volume of big box}}{\text{Volume of small box}} = \frac{1920\text{cm}^3}{240\text{cm}^3} = 8.$$

\therefore The volume of the big box is 8 times larger than the volume of the small box.

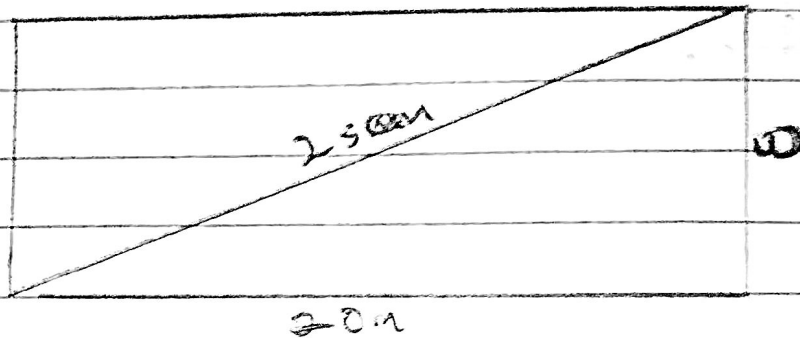
c) implies for every ~~100~~ $10\text{cm} \times 10\text{cm}$
that is $100\text{cm}^2 = \text{Gt} \1.50

$$\begin{aligned}944\text{cm}^2 &= \frac{944}{100} \times \text{Gt} \$1.50 \\ &= \text{Gt} \$14.16\end{aligned}$$

Q2.

A rectangular playing field is 20 meters long. A straight path cut across the field along one of its diagonals. If the length of the path is 25 meters, how wide the playing field.

Solution



Let width = w

Using Pythagorean theorem

$$H^2 = A^2 + O^2$$

$$25^2 = 20^2 + w^2$$

$$625 = 400 + w^2$$

$$625 - 400 = w^2$$

$$225 = w^2$$

$$\sqrt{225} = w$$

$$15 = w$$

$$w = 15 //$$

∴ The width = 15 meters.

Q3

a. At the final school rugby match, the ratio of children to adults is 3:2

There are 120 children in the crowd.

Each child ticket costs a third of the adult ticket.

How much money was collected from the ticket sale?

b. Children are at school from 9:00 to 15:15.

They have two breaks: the first one is 20 minutes and the second one, the lunch break, is 40 minutes.

What is the percentage of a school day allocated to breaks?

Question 3

$$\text{Children ratio} = 3$$

$$\text{Adult ratio} = 2$$

$$\text{Total ratio} = 3 + 2 = 5$$

Number of children has been given so let's use that to find the total number and also the adult number.

$$\text{Children} = \frac{\text{Children ratio}}{\text{Total ratio}} \times \text{Total No.}$$

$$120 = \frac{3}{5} \times x$$

$$\frac{600}{3} = \frac{3x}{3}$$

$$x = 200$$

Total number is 200

$$\text{Adult} = 200 - 120 = 80$$

Now the adults are 80

Children are 120

$$\text{Adult ticket} = £9$$

$$\text{children} = \frac{1}{3} \times 9 = £3$$

$$\therefore \text{Money collected} =$$

$$\text{Children Money} + \text{Adult Money}$$

$$= 120(3) + 80(9)$$

$$= 360 + 720$$

$$= \underline{\underline{£1080}}$$

Question 6

$$15:15$$

$$9:00$$

$$\underline{6:15}$$

The school lasts for 6 hours
15 minutes.

$$\text{The two breaks} = 20 + 40 = 60$$

$$\text{A school day} = 6 \text{ hours } 15 \text{ minutes}$$

$$\text{The breaks} = 60 \text{ minutes} / 1 \text{ hour}$$

To be on the safer side, convert
6 hours 15 minutes to minutes.

$$6 \text{ hours } 15 \text{ minutes} = 375 \text{ minutes}$$

Percentage of the school day =

$$\frac{60}{375} \times 100$$

$$= 16\%$$

$$= \underline{\underline{16\%}}$$