**SET 2**

Part A

1. The cheque shows an amount of thirteen million, seven hundred and nine thousand and nine Ghana cedis. Which one of the following gives the correct amount in figures?

   A. GH¢13,709,009

   B. GH¢13,700,909

   C. GH¢13,790,909

   D. GH¢13,709,09

2. Study the sequence of numbers and identify the missing number
   9,800,750,   9,800,200,   9,799,650,   ……………., 9,798,550

   A. 9,798,550

   B. 9,799,100

   C. 9,789,550

   D. 9,719,100

3. The chart shows the number of people counted in some selected regions during the 2021 Population and Housing Census in Ghana.

2021 Population & Housing Census in Ghana

WESTERN
2,060,585

CENTRAL
2,859,821

EASTERN
2,925,653
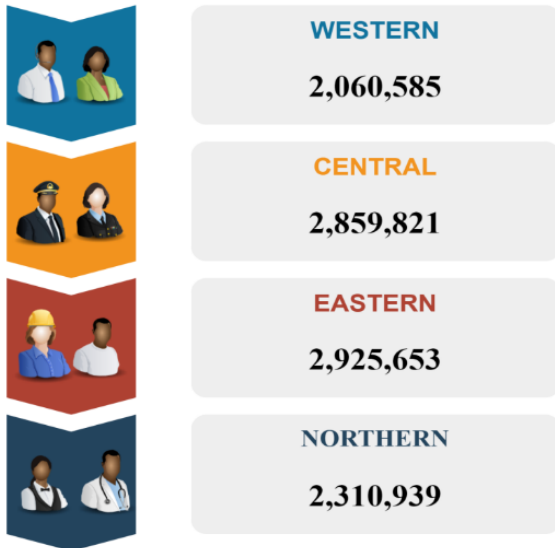
NORTHERN
2,310,939

Arrange the regions, from the least to the highest population.

A. Central, Western, Eastern, Northern

B. Western, Eastern, Central, Northern

C. Western, Northern, Central, Eastern

D. Eastern, Western, Northern, Central

4. The diagram below shows a group of 50 students who study French or Ghanaian Language or both. Everyone studies at least one of the two languages. 10 study both languages and 8 more study French than Ghanaian Language.

Use the diagram to answer Q4.

n(S) = x   n(F) = x + 8

10
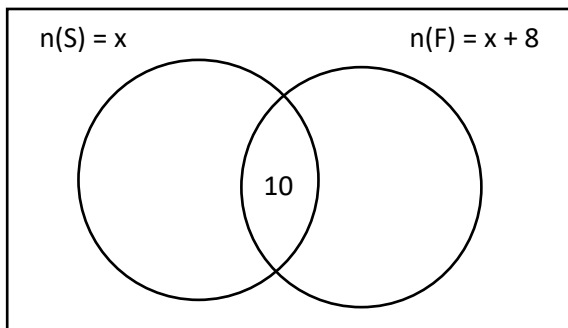
How many of the students study French but not Ghanaian Language?
A. 10
B. 16
C. 24
D. 40

5. The speed of light in a vacuum is approximately 299,792 kilometers per second (km/s). Express it in standard form.
   A. 29.9792×10^4
   B. 2.99792×10^5
   C. 29979.2×10^5
   D. 2.99792×10^{-5}

6. A trader has an amount of GH¢ 783,642.00 in her bank account. Which one of the following gives the traders amount, correct to the nearest thousand?
   A. ¢783000.00
   B. ¢780000.00
   C. 784000.00
   D. 800000

7. The height of Mount Afadza 885.346 meters. Which one of the following gives the correct measurement, to the nearest hundredth?

   A. 885.00
   B. 885.35
   C. 885.46
   D. 885.34

8. During an open day, a total amount of ¢84376.96 was spent on the school's library and computer center. Write the amount correct to the three significant figures.
   A. ¢84400.00
   B. ¢83400.00
   C. ¢84380.00
   D. ¢83480.00

9. Evaluate $\dfrac{27 \times 10^2 \times 3}{10^3 \times 8.1 \times 9}$
   A. $\dfrac{1}{3}$
   B. $\dfrac{1}{9}$
   C. $\dfrac{1}{10}$
   D. $\dfrac{1}{18}$

10. A learner was asked to add 6147 to 8403, but instead subtracted 6147 from 8403. If she later added the two numbers, find the difference between her two results.
    A. 14494
    B. 12294
    C. 14550
    D. 12256

11. A girl went to shopping with an amount of GH¢1050.95 in her purse. After shopping, she had GH¢347.97 left. How much did she spend altogether after shopping?
    A. GH¢ 982.79
    B. GH¢ 802.98
    C. GH¢702.89
    D. GH¢702. 98

12. Given that $4^x = \dfrac{1}{8}$, which one of the following gives the correct value of y?
    A. $\dfrac{-3}{2}$
    B. $\dfrac{-2}{3}$
    C. $\dfrac{3}{2}$
    D. $\dfrac{2}{3}$

13. The number of fish in a pond is increasing at the rate of 2^{n-2}, where n is the number of months. How many months will be required to produce a total of 64 fishes in the pond?
    A. 10 Months
    B. 6 Months
    C. 4 Months
    D. 2 Months

14. Which one of the following fractions is equivalent to 85%?
    A. $\dfrac{15}{20}$
    B. $\dfrac{17}{20}$
    C. $\dfrac{17}{25}$
    D. $\dfrac{35}{50}$

15. Which one of the following is _NOT_ true?
A. $\dfrac{2}{4} = \dfrac{8}{12}$
B. $\dfrac{3}{4} = \dfrac{9}{12}$
C. $\dfrac{2}{5} = \dfrac{6}{15}$

D. $\frac{2}{3} = \frac{10}{15}$

16. A boy spent $\frac{1}{3}$ of his pocket money for breakfast and $\frac{1}{4}$ of the remainder on sweets. If he spent the remaining amount on lunch, what fraction of his pocket money was spent on lunch?

    A. $\frac{1}{6}$

    B. $\frac{2}{3}$

    C. $\frac{1}{2}$

    D. $\frac{10}{15}$

17. There are 450 pupils altogether in a certain Junior High School. If $\frac{2}{5}$ of the pupils are boys, how many girls are in the school?

    A. 180

    B. 200

    C. 250

    D. 270

18. A baker decides to bake pieces of cake with a total 28 grams of flour. If she needs $\frac{1}{4}$ grams for each cake, how many pieces of cake can she make?

    A. 119

    B. 116

    C. 112

    D. 108

19. The ages of Edem and Ali are in the ratio 2:3. Which one of the following is a false statement?

    A. Edem's age is $\frac{2}{3}$ of Ali's age

    B. When Edem is 20 years, Ali will be 30

    C. Ali's age is one and a half times that of Edem.

    D. Ali's three times as old as Edem

20. A basket contains a number of good and bad oranges. After every three good oranges, the next 1 is bad. If there are 12 bad oranges, how many oranges are good?
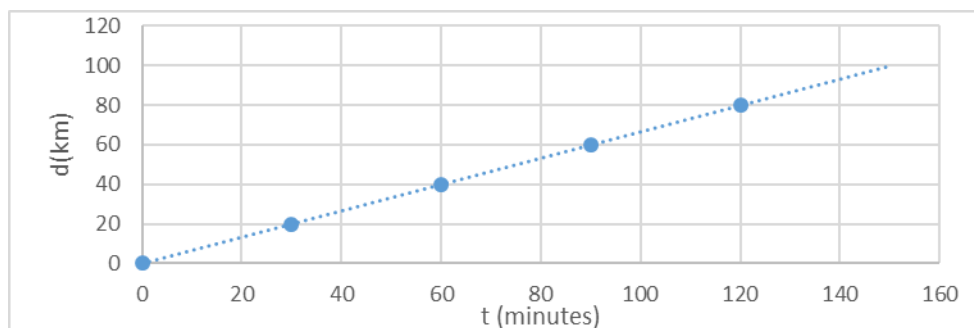
    A. 36

    B. 24

    C. 20

    D. 18

21. The distance travelled by a cyclist after a given time, t hours is given by a kilometer as shown in the table. Use the table to answer question 21

T	1	2	3	5	7
D	25	50	75	y	175

Find the value of y

A. 95km
B. 100km
C. 125km
D. 130km

The graph shows the distance, dkm travelled by a motorist after a time, t minutes. Use it to answer Question 22.

22. Which one of the following approximately gives the speed of the motorist per hour?
    A. 20km/hr
    B. 30 km/hr
    C. 40 km/hr
    D. 50 km/hr

23. Simplify $2\sqrt{18} - 3\sqrt{72} + 3\sqrt{50}$, leaving your answer as a surd.
    A. $3\sqrt{2}$
    B. $4\sqrt{2}$
    C. $-3\sqrt{2}$
    D. $-4\sqrt{2}$

A learner saves GH¢ 7.00 every week out of her pocket money as shown in the table. Use it to answer Q. 24

WEEK	1	2	3	4	5	9
MONEY GH¢	7	14	21	28	35	

24. What is the total amount saved by the learner after 9 weeks?
     A. GH¢42.00
     B. GH¢48.00
     C. GH¢56.00
     D. GH¢63.00

25. A learner listed the following ordered pairs during mapping and relationships lesson:
(0,1), (1,1), (2,3), (3,5), (5,9)
Which one of the following gives the rule for the mapping?
A. $x \rightarrow 2x-2$
B. $x \rightarrow 2x+1$
C. $x \rightarrow 2x-1$
D. $x \rightarrow 2x+2$

26. The table below shows the mapping for the relation y= x-3.

X	-1	0	1	2		5	7
Y	-4	-3	-2	-1	0	2	3

Find the value of x for which y=0
    A. -3
    B. -2
    C. 3
    D. 2

27. Which of the following plane figures has the LEAST number of lines of symmetry?
    A. Square
    B. Rectangle
    C. Isosceles triangle
    D. Rhombus

28. A straight line passing passes through P(2,6) and Q(-1,12). What is the gradient of the line PQ?

    A. -2
    B. 2
    C. $\frac{1}{2}$
    D. $-\frac{1}{2}$

29. A line goes through A(4, -2) and has a gradient of 2. Which one of the following
    equations represents the line?

    A. $y+2x - 10 = 0$
    B. $y - 2x - 10 = 0$
    C. $y + 2x + 10 = 0$
    D. $y - 2x + 10 = 0$

A family of 2 adults and 2 children paid altogether GH¢100.00 as lorry fare for a certain
journey. Another family of 1 adult and 3 children paid GH¢70.00 for the same journey. The
lines on the graph below are drawn to represent the above information. Study the graph
carefully and use it to answer Question 30.
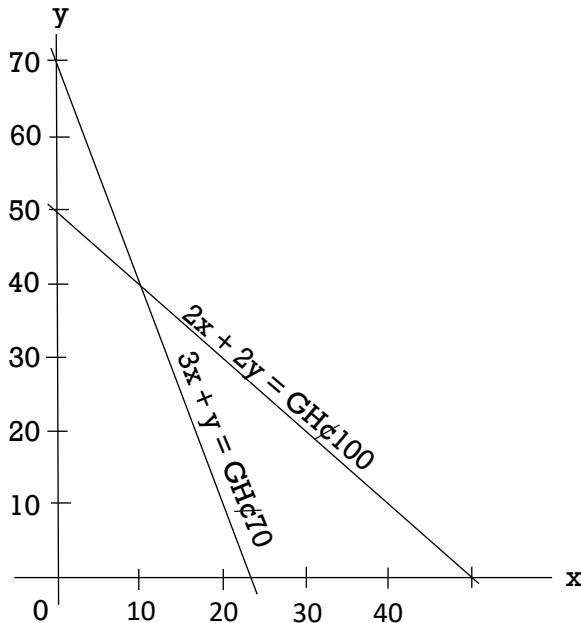
30. How much did each child and each adult pay for the journey?

    A. GH¢ 10.00, GH¢ 40.00
    B. GH¢ 12.00, GH¢ 40.00
    C. GH¢ 14.00, GH¢ 45.00
    D. GH¢ 15.00, GH¢ 45.00

31. During Christmas sales, a supermarket allowed 10% discount on all cash sales. Mrs
    Akapoh paid GH¢ 1890.00 for an item at the supermarket after the 10% discount. How
    much was the original price?

    A. GH¢2,400.00
    B. GH¢ 2,100.00

C. GH¢ 2,079.00

D. GH¢ 1980.00

32. Aba has **"p"** number of apples. She then gives **"m"** apple each to three of her friends. Which one of the following expressions represents the number of her remaining apples?

A. p -3m

B. p+ 3m

C. $p - \frac{m}{3}$

D. 3p – m

33. At a car rental shop, the cost, **C** in cedis for hiring a car for a journey of **d** km is given by C= 7d +85.75. If Mr. Blay hired a car for a journey of 540km, how much did he pay?

A. GH¢3865.75

B. GH¢3780.00

C. GH¢3694.25

D. GH¢3235.75

34. A head-potter (kayaye) has some Ghana pesewas coins amounting to GH¢ 13.30. If GH¢7.50 are fifty-pesewa coins. How many of the coins are twenty-pesewa coins?

A. 28

B. 29

C. 30

D. 31

35. When Dufie was born, the father was 44 years old. If Dufie is 13 years now, in how many years' time will the father's age be three times that of Dufie? Which one of the following gives the correct equation for above information?

A. 3n + 13 = 57 + n

B. 3n + 13 = 44 + n

C. 3(n+ 13) = 57 + n

D. 3(n + 13) = 44 + n

Study the chart below and use it to answer Q.36

□	+	□	+	□	=	30
🍎	+	🍎	+	🍎	=	15
□	+	△	+	△	=	22

36. What is the exact value of

$\square$ + $\square$ + 🍑 × △ ?

    A. 31
    B. 40
    C. 50
    D. 67

37. Papa Kojo is four times as old as his son Ato. In five years' time, Papa Kojo will be three times as old as Ato. How old is Ato today?
    A. 5 years
    B. 10 years
    C. 12 years
    D. 15 years

38. Two friends, Ato and Amina went to the shop to purchase fruits. Ato bought six oranges at GH. 20.00 per orange and Amina bought five fingers of banana at GH.12.00 per finger.

Write an expression for the total cost (C) of items they bought.

A) $C = 6(20) + 5(12)$
B) $C = 6 + 5(20 + 12)$
C) $C = 6 + 20 + 5 + 12$
D) $C = 6 \times 20 \times 5 \times 12$

39. In a Mathematics class, Hillary added 5 to four times a certain number and realised the results is not more than twice that number plus 15. What are the possible values of the number?

    A. $n \leq 5$
    B. $n < 5$
    C. $n \geq 5$
    D. $n > 5$

40. Ekow is 8 years old while his mother is 42 years old. In how many year's time will the mother's age be three times that of her son, Ekow?
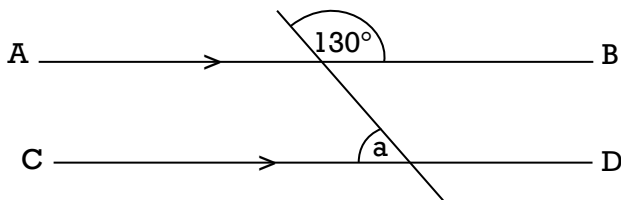
    A. 6 years
    B. 8 years
    C. 9 years
    D. 10 years

41. In the diagram, PR is a straight line and TQ is perpendicular to PR. Find the angle marked y?

T

A. 17°
B. 27°
C. 30°
D. 36°

63° y

P ——————————— R
Q
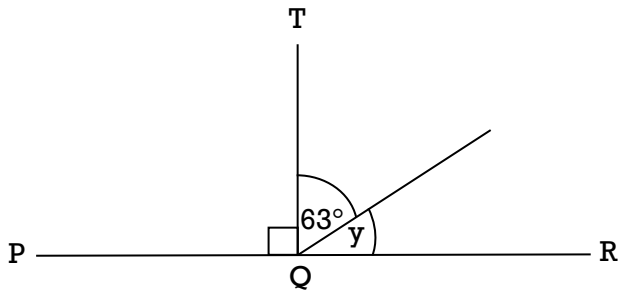
42. In the diagram, lines AB and CD are parallel.

A ————————→———— B
130°

C ————————→———— D
a

What is the size of the angle marked a?
    A. 70°
    B. 60°
    C. 50°
    D. 40°

43. In the diagram triangle PQR is an isosceles triangle PRQ =50° and angle PSR = 42°.
Calculate the value of angle marked y

P

y

A. 18°
B. 10°
C. 8°
D. 7°

50°   42°

Q   R   S
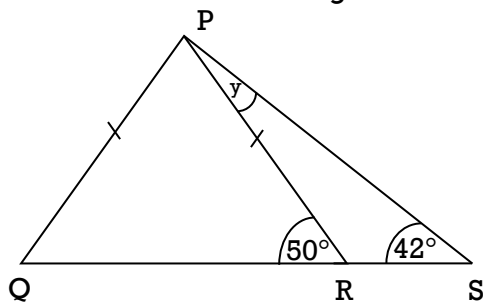
44. A boy measured the interior angles of an irregular polygon with five sides. Three of the angles were 118°, 112° and 98°. He found out that the remaining two angles were equal. Which one of the following angles gives the size of one of the two remaining angles?

    A. 106°
    B. 110°

C. 202°

D. 210°

45. Use this conversation between Ama and Kofi to answer 45

Ama

Kofi

Kofi, I have a 72 metre long rope

What is it for Ama?

Can you use the rope to form a rectangle so that the length is twice its width?

Yes I can, Ama

Good Kofi? Then do it and tell me the dimensions

Which of the following is the rectangle formed by Kofi?

A.
10m
20m

C.
12m
24m

B.
11m
22m

D.
15m
30m

46. In the picture, the bearing of Nancy, a Girl's Guide from Paul, is 070°. What is the bearing of Paul from Nancy?

   A. 020°
   B. 090°
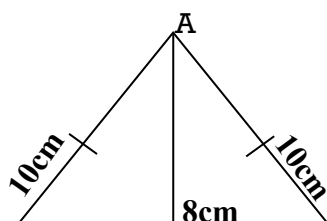   C. 110°
   D. 250°

70°
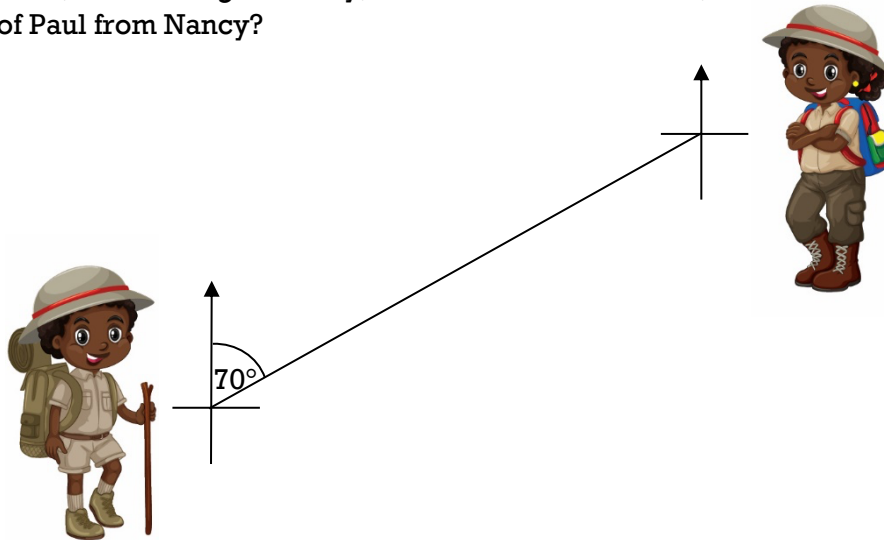
47. A learner plotted two points in the oxy plane as shown in the graph. Use it to answer Q.47
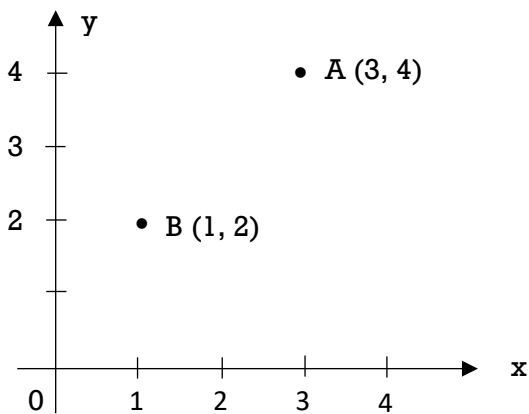
Which one of the following gives the correct magnitude of AB?
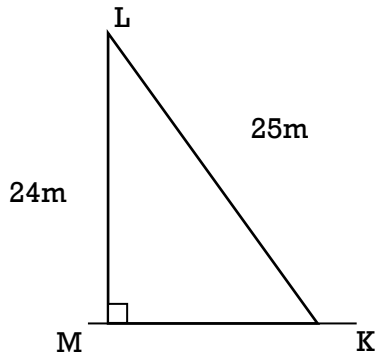
   A. $2\sqrt{2}$
   B. $1\sqrt{2}$
   C. $2\sqrt{3}$
   D. $\sqrt{3}$

48. In the diagram, triangle ABC is an Isosceles, with $|AB| = |AC| = 10$cm.
   If the height $|AD| = 8$cm, what is the length of side $|BC|$?

A

10cm

10cm

8cm

A. 6cm
B. 8cm
C. 10cm
D. 12cm

49. A painter places his ladder, 25m long against a vertical wall, as shown in the diagram. If the ladder reaches 24m up the vertical wall, find the area enclosed by the ladder, the wall and the horizontal ground.

A. 49 m²
B. 84 m²
C. 168m ²
D. 175m ²

50. In the diagram, a boy is standing 15m away from the foot of an electricity pole. He observes a worker from Electricity Company of Ghana (ECG) who is fixing a problem at the top of the pole, with his angle of elevation being 30°. Which one of these expressions gives an estimated height (h) of the electricity pole?

A. 15 tan 30°

B. 15 tan 60°

C. $\dfrac{15}{tan30}$
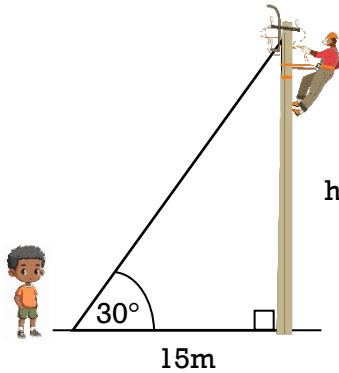
D. $\dfrac{tan60°}{15}$

51. Given that $u = \begin{pmatrix} -2 \\ 3 \end{pmatrix}$, $v = \begin{pmatrix} 6 \\ 2 \end{pmatrix}$ and $z = \begin{pmatrix} 0 \\ 4 \end{pmatrix}$, evaluate $\dfrac{1}{2}[2(u) + v - z]$

A. $\begin{pmatrix} -2 \\ 1 \end{pmatrix}$

B. $\begin{pmatrix} -1 \\ 2 \end{pmatrix}$

C. $\begin{pmatrix} 2 \\ 1 \end{pmatrix}$

D. $\begin{pmatrix} 1 \\ 2 \end{pmatrix}$

52. Two learners were tasked to write a vector each such that the vectors will be equal. The vectors they wrote were $\begin{pmatrix} 5 \\ -8 \end{pmatrix}$ and $\begin{pmatrix} 2x-1 \\ -8 \end{pmatrix}$. What is the value of x?
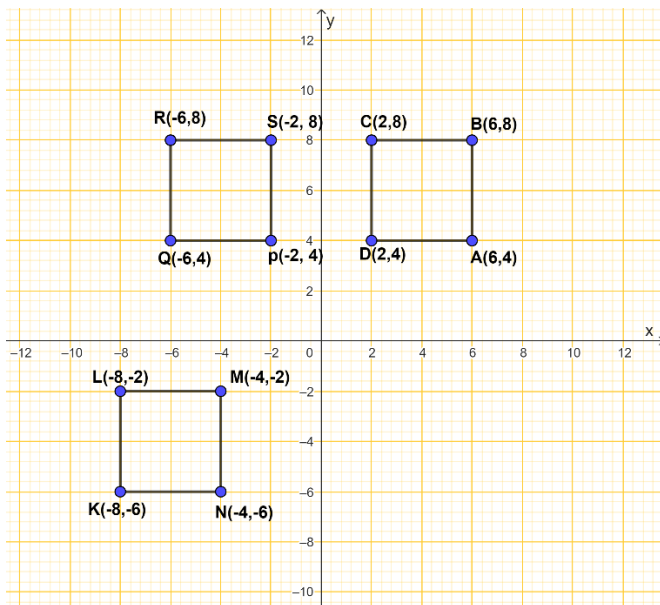
A. 3
B. 2
C. -2
D. -3

53. The diagram is a net of a triangular prism. Study it carefully and calculate the total surface area of the prism.

10cm   8cm   10cm

14cm

12cm
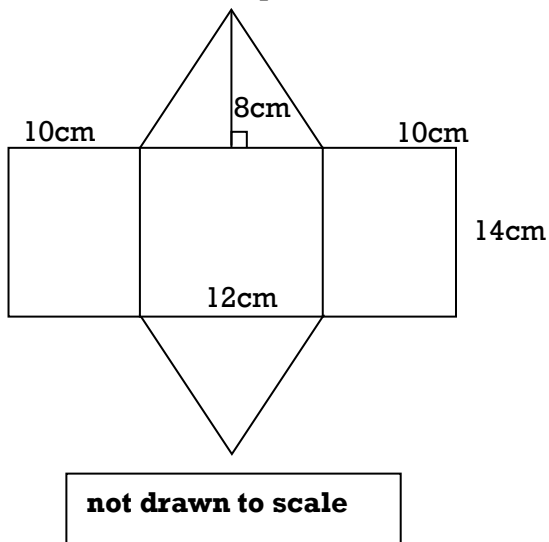
A. 352cm^2
B. 448cm^2
C. 544cm^2
D. 548cm^2

not drawn to scale

Study the graph carefully and use it to answer Q.54

54. Describe the transformation that moves the quadrilateral PQRS to quadrilateral MNKL where P→ M, Q→ N, R→ K and S→ L.

    A. Reflection through the axis
    B. Reflection through the line y=2
    C. Anticlockwise Rotation about the origin through 90°
    D. Clockwise Rotation about the origin through 90°

55. In the diagram, triangles ADE and ABC are similar. $|AE|$= 5cm, $|EC|$= 15cm and $|BC|$= 12cm. What is the value of y?

    A. 3cm
    B. 4cm
    C. 5cm
    D. 6cm

A

5cm

D   E

y

15cm

B   12cm   C

not drawn to scale
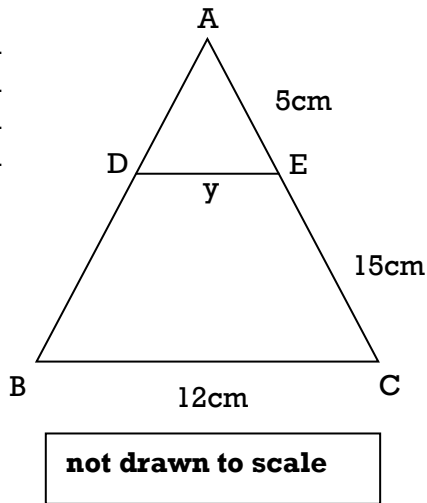
56. Miss Nancy wants to know the food each of her Basic 2 learners like most. Which one of the following methods will be most suitable for her to use to gather information?

    A. Internet
    B. Interview
    C. Observation
    D. Experiments

Mr. Appiah, the Basic 3 teacher plotted the performance of his class after a mathematics test in the following stem-and-leaf plot.

Use the plot to answer Question 57

Stem	Leaf
0	5,7,8,9
1	5,6,7,8
2	4,5,6,7,9

3	2,7,7,8,9,9
4	2,3,4,6,7,8,9
5	1,2,5,6,7,8,9
6	1,3,4,6,7,8,9

57. How many of the learners scored marks greater than 44 but less than 66?

    A. 20

    B. 18

    C. 16

    D. 14

A researcher collected data about malaria disease in a certain town according to some age groups.

Use the grouped frequency distribution to answer Q. 58

Age groups	0-9	10-19	20-29	30-39	40-49	50-59	60-69
Number of persons	1	3	5	6	8	9	3

58. Which age group that had the highest recording of malaria diseases?

    A. 30-39

    B. 20-29

    C. 50-59

    D. 40-49

59. The report card shows Kofi's performance in five subjects. If the average mark for the five subjects is 68, what will be Kofi's score in social studies?

END OF FIRST TERM REPORT

Name: Kofi Krampah

Class: Basic 8

Subject	Score	Grade
English	58	4
Mathematics	60	3
Science	55	4
ICT	72	2
Social Studies	---	1

Average Score: **68**

A. 80
B. 82
C. 95
D. 97

60. In a certain JHS class, there are 5 more girls than boys in the class. If there are 20 boys in the class, what is the probability of selecting at random from the class, a girl as class prefect?

A. $\frac{2}{9}$

B. $\frac{4}{9}$

C. $\frac{5}{9}$

D. $\frac{7}{9}$

Section B

1. a. The ratio of the number of boys to the number of girls in a certain Junior High School is 5:7.
   If there are 120 boys in the school;
      i. How many more girls than boys are in the school?
      ii. What is the total number of pupils in the school?
   b. A lady's dress costs four times as much as one lady's bag. If the lady's bag costs GH¢ 295.00, how much will one lady's bag and 3 dresses cost?

2. The table shows the frequency distribution of marks obtained by a group of learners in a class test.

Marks	1	4	5	6	7	8
Frequency	2	5	6	y	6	4

   a. If the mean mark was 5.6, find the value of y
   b. Find (i) mode   (ii) median   marks
   c. If the pass mark was 5, what percentage of the learners passed? Correct your answer to one decimal place.

3. a. Simplify the following surds

   i. $2\sqrt{18} + 3\sqrt{48} - \sqrt{50} - 2\sqrt{27}$

   ii. $\dfrac{\sqrt{2} + \sqrt{5}}{\sqrt{10}}$

   b. P (2, 4), Q (8, 4) and R (5, 6) are points in the same plane and lying on the same straight.

   Find the

      i.   value of y
      ii. equation of the line that passes through P, Q and R

4. In a certain class, the number of boys are 5 more than the number of girls. If one more girl joins the class, the ratio of the number of boys to the number of girls will be 5:4

   a. How many girls are in the class?

   b. How many pupils altogether are in the class?

   c. If a prefect is to be selected at random from the class, what is the probability of selecting as a prefect?

5. The mean age of a group of 8 boys is 16 years. Two girls, aged 13 years and 15 years joined the group.

   Calculate the new mean age of the group

b. The pie chart shows the weight (in kg) of food items Mr. Akoto bought for her household. Use the pie chart to answer the following questions
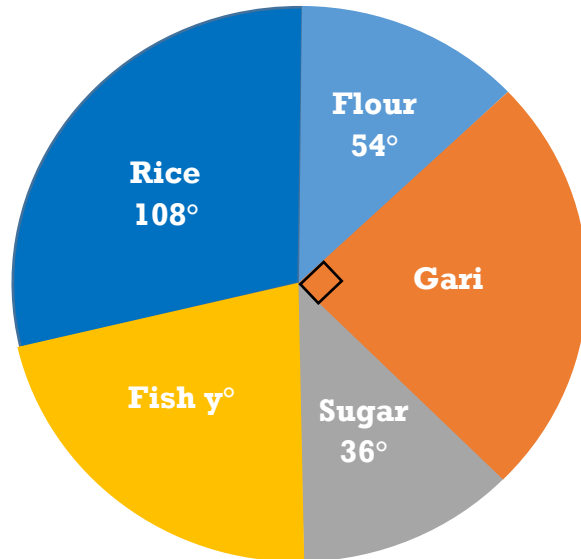
i.   Find y, the angle representing Fish
ii.   If Mrs Akoto bought a total of 20kg of items;
   a.   How much flour (kg) did Mrs Akoto buy?
   b.   Express, correct to two decimal places the weight of sugar as a percentage of the weight of rice.

6. A District Assembly wants to construct a clinic for the people of three towns.

Agyeikrom (A), Kwakyekrom (K) and Peposo (P). The distance from Agyeikrom to Kwakyekrom is 16 km, from Agyeikrom to Peposo is 20km while from Agyeikrom to Peposo is 20km while from Peposo to Kwakyekrom is 18km.

After the construction, the people of the three towns must travel equal distance to visit the clinic when they are sick.

   a.   Using a scale of 2km = 1 cm and a ruler and pair of compass, construct
       i.   Triangle AKP representing the three towns
       ii.   Locate a point inside the triangle, where the clinic can be built.

Find correct to the nearest km, the distance they will travel to visit the clinic.