# CLASS 8 HOLIDAY HOMEWORK TERM 2 2020

# MATHEMATICS

## MEASUREMENTS
### Exercise 1
### Length and Perimeter

1. A tailor had 31.31m of a ribbon to decorate dresses. Each dress was decorated with a ribbon of 101cm. How many dresses did he decorate?

2. Ken's farm is rectangular in shape. It measures 435m by 930m. He fenced it off all around. How many fencing posts 6m apart were required?
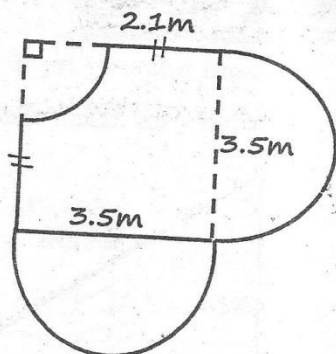
3. Joy's stride is 9dm long. How many strides does she take to cover a distance of 3.6 Hectometers?

4. Find the perimeter of the following figures

(a)



(b)
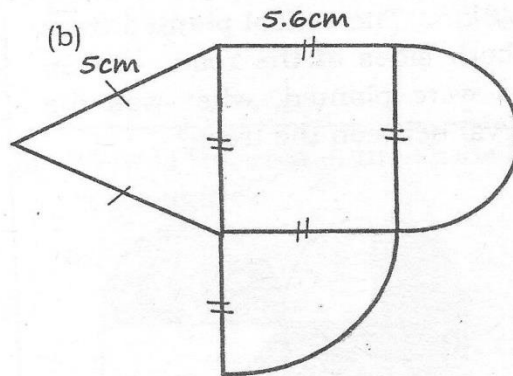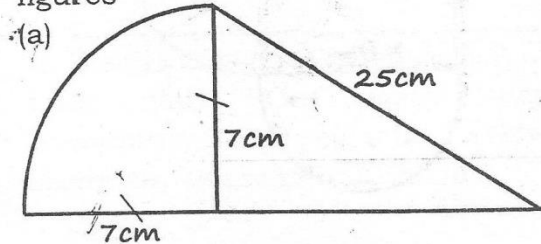


5. Find the perimeter of a square with the same area as a rectangle 63m long and 28m wide.

6. The plot shown was fenced using four stands of wire. What length of wire was used?



2.1m
3.5m
3.5m

7. The length of the road to school is 0.528km. The school planted trees on both sides of the road. If 134 trees were planted, what was the interval between the trees?

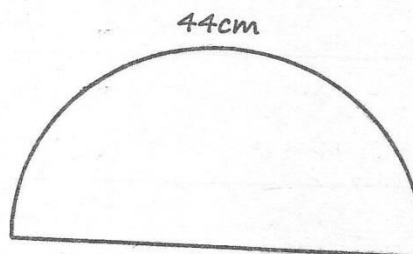8. A boy rolled a wheel of radius 140cm. How many revolutions did it make to cover distance of 1.76km?

9. A square piece of land with an area of 16ha was fenced with posts which were 40m apart. If the cost of each post was sh. 250, how much did Eve spend to fence it?

10. The perimeter of a rectangular piece of land is 102.4m. If the length of the plot is 30.8m. Find its width.

11. The circumference of the semi-circle part is 44cm. What is the perimeter of the figure?



44cm

## Exercise 2
### Area, Volume and Capacity

1. A piece of sugarcane with a circumference of 44cm and a length of 1.5m was cut into two equal halves along its length. What was the surface area of one piece in cm

2. The figure represents a closed water storage container. If one - ½ litre tin of paint will cover 3m². How many ½ litre tins will be needed to paint the container?
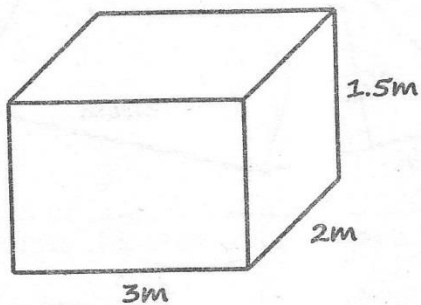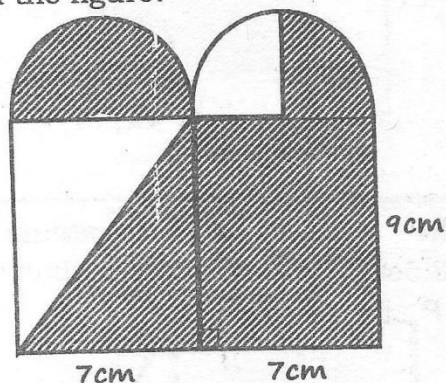


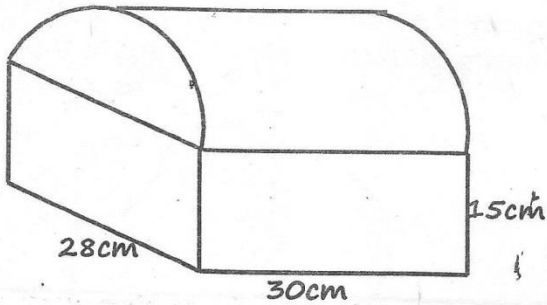3. The diagram shows a trapezium ABCDE. AB is parallel to EC and BD = BC. What is the area of the trapezium ABCDE?
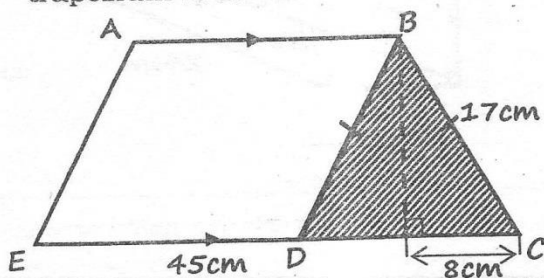


4. In a school, each pupil uses 5dl of milk daily. One week they consumed 2.5m³ of milk. How many pupils are in that school?

5. What is the area of the shaded part in the figure?

**6.** Find the volume of the figure

28cm
30cm
15cm

**7.** The capacity of the figure below is 15.4 litres. If its height is 25cm, what is its diameter?

25cm

**8.** The area of the trapezium is 58.5cm². What is the length of QL?

P     8.5cm     K
6cm
J        Q       L

**9.** How many cylindrical tins can be packed in the box shown?

1.5m
2.24m
2.8m
14cm
25cm

**10.** Calculate the base of the cross section. The volume of the Prism is 13,800cm³.

20cm
30cm
b
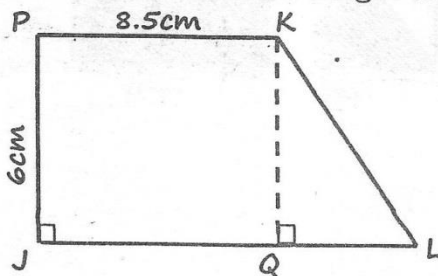
**11.** What is the total length of the wire needed to model the Prism shown?

8cm
24cm
15cm
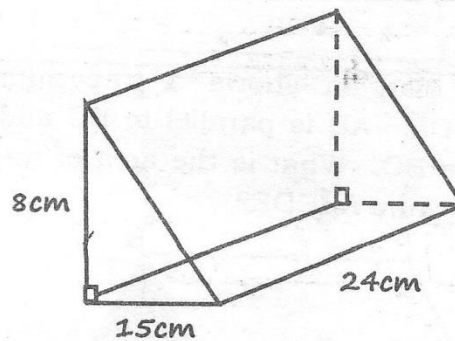
**12.** Find the volume of the block shown



8cm
10cm
5cm
12cm
15cm
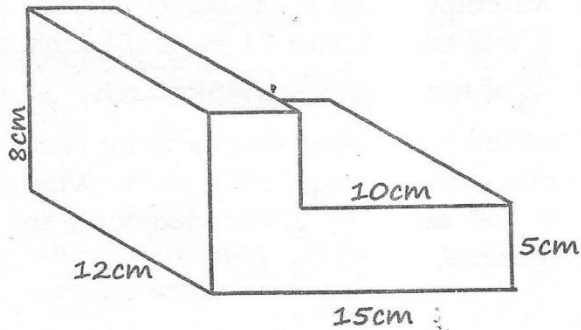
**15.** The container contains 108 decilitres when ¾ full. Find the height of the container



18cm
25cm
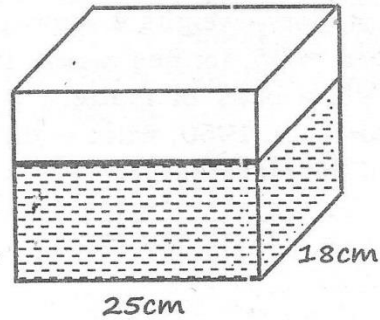
**13.** A tank whose capacity is 1260 litres is ³/₈ full. How many more litres are needed to fill it?

**16.** The area of the shaded part in the figure is 81cm². Find the width of the margin.



12cm
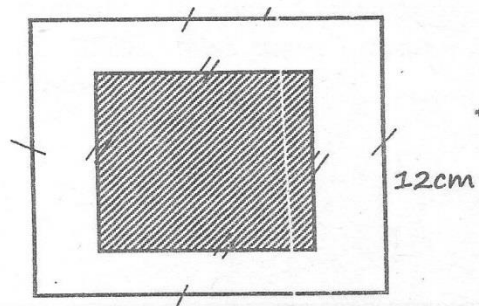
**14.** Calculate the area of the unshaded part



14cm
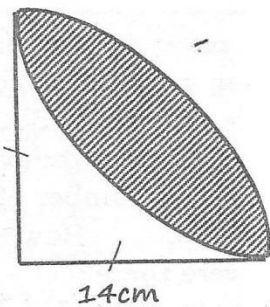
7. Joyce paid sh. 42,000 for a refrigerator after getting a discount of 12½%. How much more would she have paid had she been given a discount of 10%?

8. Nyokabi had 8 notes of sh. 200, 6 notes of sh. 100, 4 notes of sh. 50 and 45 coins of sh. 40. She changed the money into equal coins of sh. 20 and sh. 10. How many coins did she receive altogether?

9. Jackie deposited sh. 22,800 in a bank that paid simple interest at a rate of 3% p.a. After how long did her money amount to sh. 23,997?

10. Brian deposited sh. 35,000 in a bank that gave a compound interest at the rate of 10% p.a. After one year he withdrew sh. 1,600. How much money was in his account, at the end of the second year?

11. Weke went to the market to buy goods worth sh. 600. He gave a sh. 1000 note and received a balance of sh. 480. What was the discount given to him as a percentage?

12. The cash price of a laptop is 10% less than the marked price. The hire purchase price is 15% more than the marked price. Kristine bought the laptop whose cash price was sh. 45,000 by paying a deposit of sh. 17,500. He was required to complete paying the balance in 8 months. What was the monthly installment?

13. Omollo cooks chips for sale. He bought 3 bags of potatoes each costing sh. 1500. He spent sh. 250 on transport. He cooked 280 plates of chips which he sold at sh. 70 each. If he spent sh. 550 on cooking oil, sh. 800 on charcoal and sh. 900 to pay his workers, how much profit did he make?

14. A sales person earns a basic salary of sh. 6,900. He is also paid a 5% commission on the value of goods sold above sh. 30,000. In one month, he received a total of sh. 10,600. What was the total sale during the month?

15. The charges of sending a telegram are sh. 15 for the first ten words or less. Any extra word is charged 60 cents. There is also a 10% tax on the total amount. How much did James pay for sending the telegram below rounded up to the nearest 50 cents?
JOHN MINJUNGU BOX 712 KERICHO. PLEASE REPORT TO WORK PLACE IMMEDIATELY. YOUR LEAVE IS OVER. JAMES

16. Mike bought the following items from a supermarket.
*3 packets of biscuits @ sh. 85*
*2 ¾ kg of rice @ sh. 40 per kg*
*3-2kg packets of flour at sh. 96*
He paid using sh. 1000 note. How much did he add in order to be given a balance of sh. 450?

17. Munyoki bought one pair of trousers @ sh. 1200, two blouses @ sh. 570, one pair of shoes at sh. 1750 and 3 jackets at sh. 1800 each. A discount of 10% was given for every item costing at sh. 1000 or more. How much money did Munyoki spend to buy the items?

18. A sales girl earns a basic salary of sh. 4500. She is also given a certain commission for any sales above sh. 15000. In one month she sold a total of sh. 37,000 and earned a total of sh. 6,150. What was his percentage commission?

19. Leon bought 2 trays of eggs at sh. 300 each. On the way he broke 6 eggs. He sold the rest at sh. 15 each. Each tray contained 30 eggs. What percentage profit did he make?

20. When a shopkeeper sells a shirt for Shs 900, he makes a loss of 10%, for how much less must he sell the shirt in order to make a loss of 12½ % loss?

# TIME, DISTANCE AND SPEED
## Exercise 5

1. An athlete took half a minute to run a 200m race. What was his average speed in kilometres per hour?

2. A bus took 7 hrs 35 min to travel from Marsabit to Wajir. If it arrived at Wajir at 5.15am on Saturday, on which day and time had it left Marsabit?

3. Rose drove from town Q to the town R at a speed of 40km/hr and back at a speed of 30km/hr. If the whole journey took 3½ hours, how far is it from Q to R?

4. 19th January 2004 was on a Monday. What day of the week was 25th March the same year?

5. The first session of a meeting started at 10.15am and ended at 1.05 pm. Lunch break took 1hr 20min. The meeting then resumed and the second session ended at 5.30pm. How long did the two sessions take altogether?

6. Omondi's watch gains 2½ minutes every half hour. The watch was set correct at 9.15 am. What time did it show at 4.15pm the same day?

7. Wamae reached Kilifi at 1.45am after travelling for 9 hrs 50 min. At what time in 24 hr clock system had he started his journey?

8. Hamza took 45 minutes to cycle to the market and another $\frac{2}{3}$ hrs to cycle back home. If the average speed for the whole journey was 24km/h, how far is the market from home?

9. A clock loses 10 seconds every two hours. If it was set right on Monday at 12.05am, at what time and day will it show on Friday at 12.05am?

10. A motorist driving at 120km/hr was expected to arrive on time in town B. 300km away. After driving for one hour, the car got a puncture and it took half hour to repair. At what speed in km/hr did

he drive after repairing the puncture if he had to arrive at the expected time?'

(b) How long did the bus stop at town U?

11. Kasyoki travelled from Nyeri to Nakuru a distance of 300km for the first 180km, he travelled by a taxi at a speed of 60km/hr. The remaining part of the journey he took a bus that travelled at a speed of 90km/hr. If he had started the journey at 9.45am, at what time did he reach Nakuru?

13. A motorist left town G for town E. He took 3 hrs to get to town D 150km away. He then rested for 15 minutes before proceeding to town E at a speed of 90km/h for 45 minutes. What was his average speed for the whole journey?

14. The table below shows the matatu fare between stages A to G

| A | | | | | | |
|---|---|---|---|---|---|---|
| 10 | B | | | | | |
| 25 | 15 | C | | | | |
| 40 | 30 | 10 | D | | | |
| 60 | 50 | 30 | 15 | E | | |
| 80 | 65 | 45 | 40 | 20 | F | |
| 100 | 80 | 60 | 35 | 20 | 5 | G |

A matatu carrying 14 passengers from stage A had 6 passengers alighting at stage E and 7 boarding it at the same point before proceeding to stage G. How much was collected for the trip?

12. Below is a bus time table from town R to town W

| Town | Arrival time | Departure time |
|---|---|---|
| R | - | 8.00 am |
| S | 10.30 am | 11.00 am |
| T | 11.45 am | 12.05 pm |
| U | 1.45 pm | 1.55 pm |
| V | 3.00 pm | 3.20 pm |
| W | 4.35 pm | 4.40 pm |

(a) How long did the bus take to travel from town T to V?

## ALGEBRA

### Exercise 5

1. What is the value of

$$\frac{x^2 - y}{2q}$$

Where x = 7, y = x - 2, q = x - y +3

2. A rectangle has a length of (2p -6) cm. If its width is 5cm, write an expression to represent the area of the rectangle.

3. Which of the following does not represent the value of x in the inequality?

$$2x + 3 > \frac{x}{2} + 9$$

A. 5      C. 3
B. 9      D. 6

4. Simplify the expressions

(a) $\frac{1}{3}(9a + 24y) + 2(8a -15x)$

(b) $10g + \frac{1}{8}(16g -4x)$

(c) $$\frac{4(y + z) + 2(3y -2z)}{2(y + z) + 2z}$$

5. Tom is two years older than Jerry but three years younger than Frank. The sum of their ages is 56 years. If Tom is **g** yrs old, write an equation that can be used to get the age of Tom.

6. Sudaa has X mangoes. Fred has four times as many mangoes as Sudaa. Najib has three mangoes less than Fred and Aisha has half as many mangoes as Sudaa. Write an expression to show the total number of mangoes the four people have.

7. Mwende brought a knife for K shillings and later sold it for Shs. y making a profit. Write an expression for the percentage profit that she made.

8. What is the value of b in the equation?

$$\frac{3b - 3}{4} + 2b = 10$$

9. Simplify

(a) $9x - 12 + 3x < 15x - 60$

(b) $3(4y - 6) + 2(y + 3)$

10. Kirathe has p cows. This is 4 times as many cows as Mugo. They have

60 cows altogether. How many cows does Mugo have?

11. Yusuf is 8 yrs younger than his wife. Their daughter is $\frac{1}{4}$ of Yusuf's age. The sum of their ages in five years' time will be 95 yrs. If Yusuf's age is x, write an equation that can be used to calculate Yusuf's age.

12. Simplify the expressions

(a) $\dfrac{y + 2(y + 3x) - y + 2x}{2y + 3(2y - 2x) - 4y + 6x}$

(b) $4(8p - 12k) - 3(4p - 9k)$

13. The perimeter of a rectangle measuring $(2x + 2)$cm by $(3x - 3)$cm is 58cm. Calculate its area.

14. The sum of Ben's and David's ages is 62 yrs now. Five years from now David will be twice as old as Ben. How old is Ben now?

15. In a meeting the number of men was 48 more than that of women. The number of children was twice the total number of men and women. If the number of men was $z$, write an expression to show the total attendance.
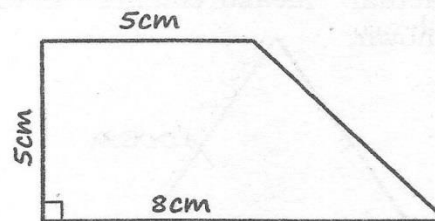
## SCALE

### Exercise 6

1. A section of a road 1.2km long is represented on a map by 4cm. Find the scale used.

2. The length of a road is 168km. The scale used on the map is 1:150,000. What is the length of the line drawn to represent the road on the map?

3. The diagram shows a scale drawing of Wairimu's land. The scale used is 1:20000. Find the actual area in hectares.



4. On a map, the scale used to draw a piece of land is 1:50,000. The

actual length of the land is 6000m while the actual width is 4000m. What is the area of the scale drawing?

5. On a map whose scale is 1:40000, a plot of land is represented by a rectangle measuring 6cm by 4cm. What is the actual area of the plot in Ares?

6. Martin's land is in the shape drawn below. The scale used is 1:10000. The actual measurements have been shown.
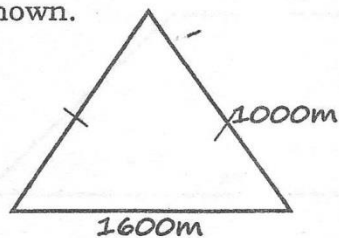


Find the area of the scale drawing in cm²

# RATIO AND PROPORTION
## Exercise 7

1. Increase 720 in the ratio 5:3

2. The price of 1kg sugar increased in the ratio 4:3. If the new price is sh. 120, what was the price before?

3. In a meeting the ratio of children to men was 3:4 while that of men to women was 5:8. If there were 120 more women than men, how many people attended the meeting?

4. The perimeter of a rectangle is 60cm. If the ratio of its length to the width is 3:2, calculate its area.

5. Twenty men could complete a certain job in 15 days. If 3 people failed to turn' up, how many more days did it take to complete the job?

7. A driver covers a certain distance a speed of 80km/hr in 2½ hrs. what speed should he drive to cov the same distance in 4 hrs?

6. In a church service the ratio of men to women was 3:4. If there were 245 people, what was the new ration of women to men after 5 more men joined and 5 women left?
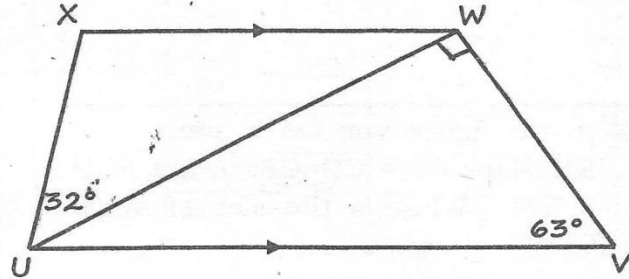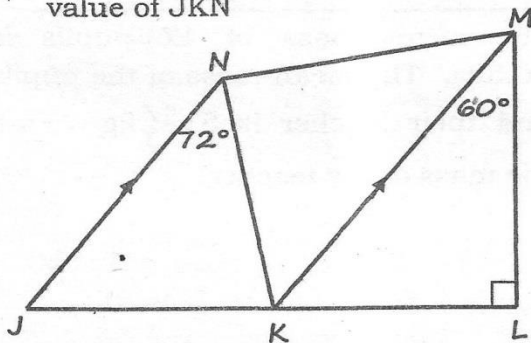
# GEOMETRY

## Exercise 7

1. Construct a rhombus ABCD where each side equals to 6cm angle ABC = 53 Drop a perpendicular from D to meet line AB at X measure angle XDA

2. Construct triangle PQR where PQ = 7cm, QR =6cm and PR =7.5cm. Bisect angle QRP and let the bisectors meet line PQ at M. Measure the size of angle PRM.

3. Construct triangle EFG where EF =6.5cm angle EFG =$70^0$ and angle EGF =$80^0$. Draw a circle touching the vertices and measure the diameter.

4. Construct parallelogram PQRS where PQ= 7cm, angle PQR =$65^0$ and line QR =4.5cm. Find the length of the shorter diagonal.

5. Write 3 characteristics /properties common to both a square and a rhombus

6. In the figure JN is parallel to KM and ML is perpendicular to JL. ANGLE KML is 60⁰ and JNK =72⁰. JKL is a straight line. Find the value of JKN
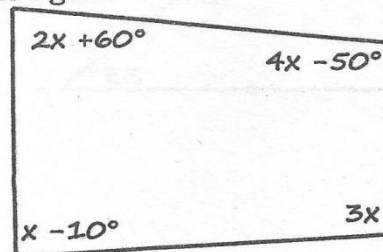


7. In the diagram, AE is parallel to LG angle IJH = 114⁰ and HFE = 128⁰ What is the size of angle ACK?



8. In the figure XW is parallel to UV. Angle XUW is 32⁰ and angle UVW = 63⁰. What is the size of angle UXW?



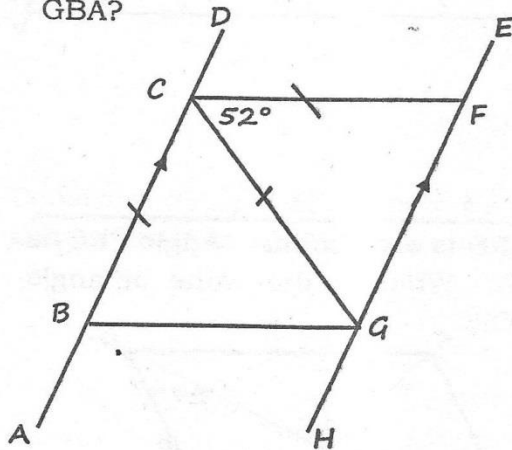9. PQRS is a rhombus. Angle PRQ is 27⁰. What is the value of angle PSO?
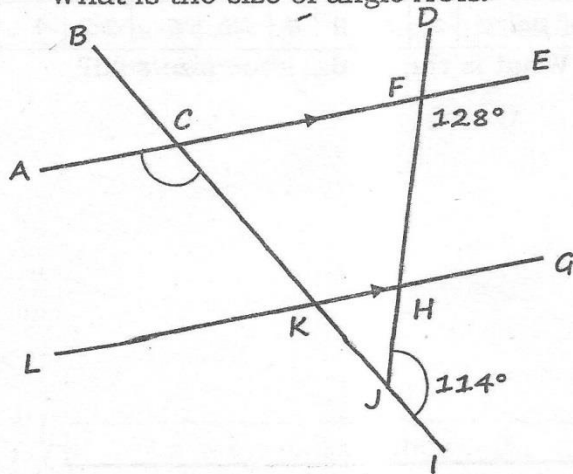


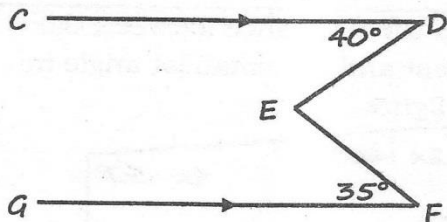10. Find the difference between the largest and the smallest angle in the figure

11. Write two properties of all quadrilaterals

12. In the figure line DA is parallel to EH. Line CB = CG=CF. Angle FCG = 52⁰. What is the size of angle GBA?



13. In the figure CD is parallel to GF. Angle EFG = 35⁰, Angle CDE = 40⁰ Find the value of reflex angle DEF



## Exercise 8
## AVERAGE, TABLES AND GRAPHS

1. The mean of six numbers is $4\frac{2}{3}$. Five of the numbers are 5,3,7,8 and 3. What is the median of the six numbers?

2. The mean mass of 17 pupils is 50.5kg. The mean mass of the pupils and their teacher is $51\frac{2}{3}$ kg. Find the mass of the teacher.

3. The table shows the number of pairs sold per size on a certain market day.

| size | 3 | 5 | 7 | 6 | 9 | 10 | 4 | 2 |
|---|---|---|---|---|---|---|---|---|
| No of pairs | 2 | 5 | 9 | 4 | 12 | 6 | 10 | 4 |

What is the modal shoe size sold?

4. During a census conducted in a certain village, the number of

children per family was recorded in the table below

| No of families | 5 | 12 | 10 | 14 | 8 | 3 |
|---|---|---|---|---|---|---|
| No of Children | 0 | 3 | 2 | 1 | 4 | 5 |

(a) What is the model number of children in the village?

(b) How many children are in the village?

5. The number of patients who were treated at St. clement dispensary was recorded as below

| Months | No. of patients |
|---|---|
| June | 38 |
| July | 79 |
| August | 92 |
| Sept | 27 |
| Oct | 103 |

Which two consecutive months recorded the highest number of patients?

6. The table below shows the number of vehicles that passed near State house primary School on a certain

week. The number for Wednesday is not shown.

| Day | No. of vehicle |
|---|---|
| Mon | 92 |
| Tue | 49 |
| Wed | - |
| Thu | 75 |
| Fri | 62 |
| Sat | 58 |

The mean number of vehicles was 72. How many more vehicles passed there on Wednesday than on Friday?

7. The table shows how people in a wedding chose their favourite drink.

| Drink | Fanta | sprite | Coke | Juice |
|---|---|---|---|---|
| No of people | 120 | 240 | 60 | 30 |

If the information was put in a pie chart, what angle would represent the difference between those who chose sprite than juices?

8. The table shows performance of three teams in a competition. The

number of times each team won, drew or lost is as shown below

| Team | Bidii | Nyota | Bingwa |
|------|-------|-------|--------|
| Win | 2 | 4 | 3 |
| Draw | 4 | 1 | 4 |
| Lose | 3 | 4 | 2 |

3 points were awarded for each game won, 1 point for a draw and no point for a game lost. How

many more points did the winning team have than the last team?

9. The graph below shows the journey covered by a bus and a cyclist. The bus stopped at town D to drop some passengers and then continued with the journey. Read it and answer the following questions.



The journey of a bus and a cyclist.
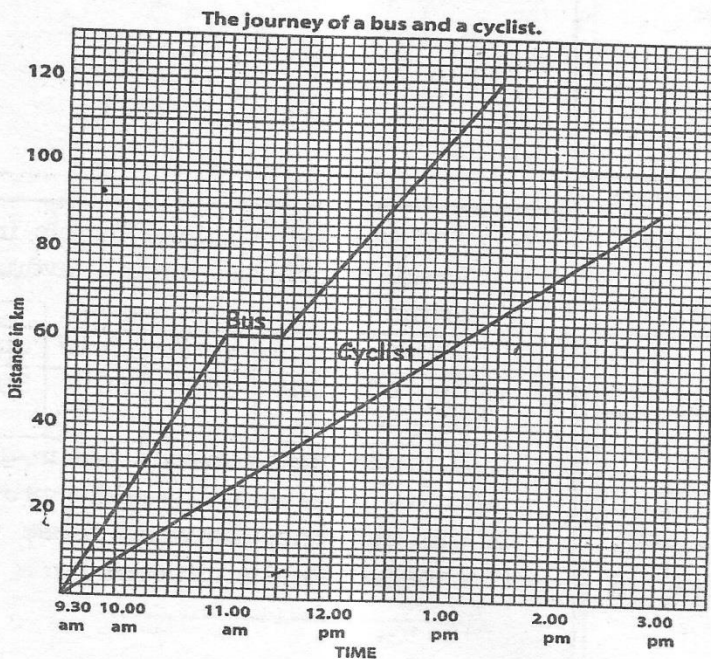
a) How far from town A was the cyclist when the bus arrived in town A.

b) What is the average speed of the bus after he stop?

c) Calculate the difference between the average speed for the bus and the average speed for the cyclist.

10. The circle graph shows how 144 pupils of Bidii School sat for an examination in various subjects. How many more pupils sat for Science than Social Studies?
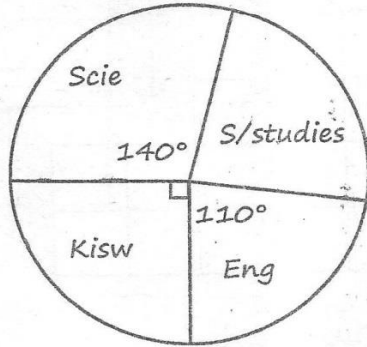


11. The pie chart shows the favourite games as chosen by pupils in a school. If 27 pupils chose volley ball as their favourite game, how many more pupils chose football than basketball?
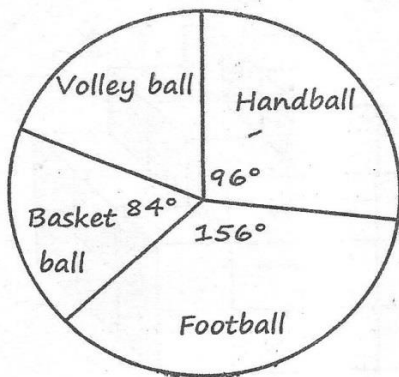


12. The graph shows fuel consumption by a vehicle at different times during the day.
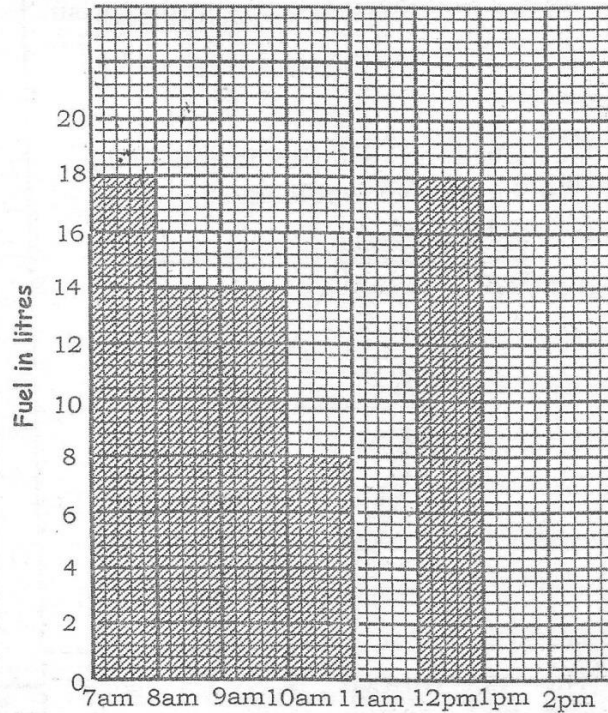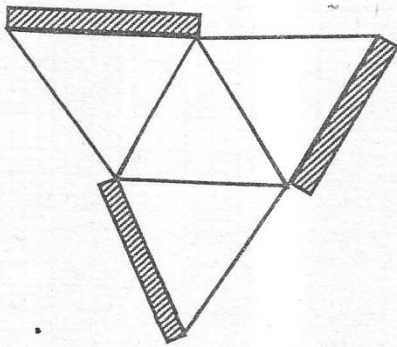


How many litres had the vehicle consumed by 11am?
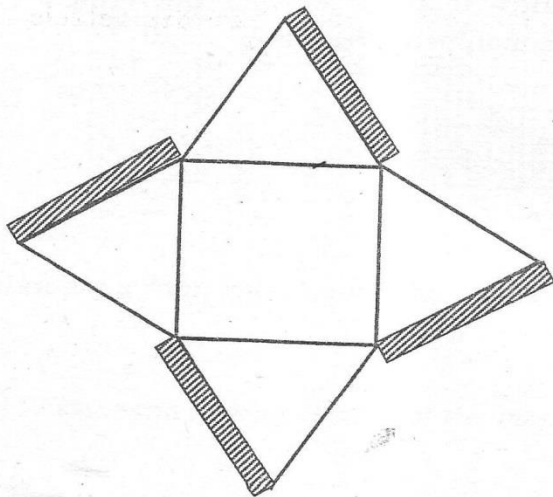
# MODELS AND STACKS
## *Exercise 9*

1. Find the product of the number of edges and faces of a triangular prism

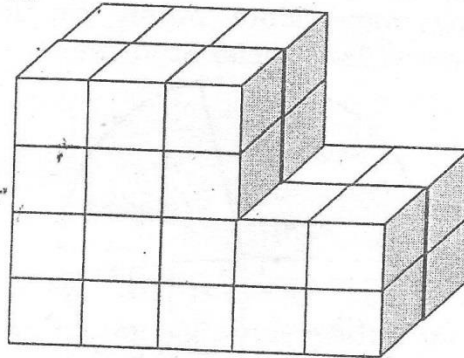2. Which solid will be formed when the net drawn is folded?



3. The net drawn is of a solid called_____



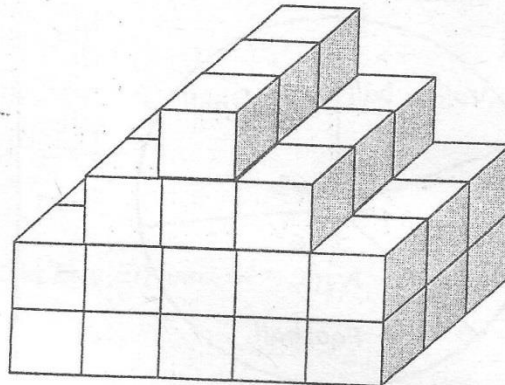b) What is the sum of the vertices and the edges of the solid which can be made from the net?

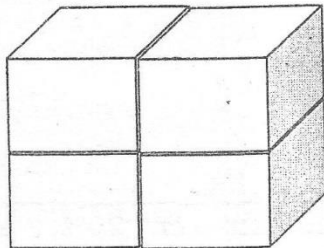4. The stack shown was dipped in paint. How may cubes were painted on
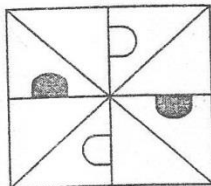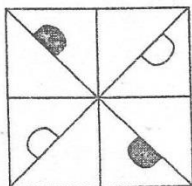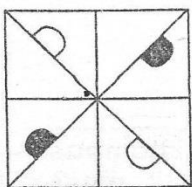


(a) Two faces only

(b) Three faces only

5. How many more cubes are needed to complete the stack?

6. Four cuboids were glued together as shown. How many faces were in contact with each other?



7. Complete the pattern above



## TERM ONE REVISION EXERCISE

1. How many groups of hundreds are there in the total value of digit 6 in the number 762993?

2. What is the value of the following correct to 2 decimal places?
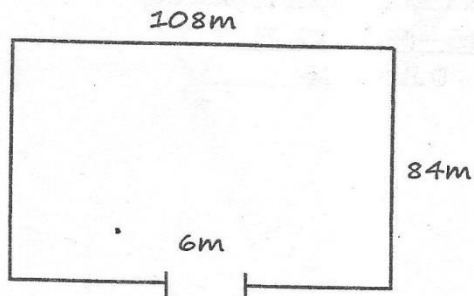$$\frac{8.16 - (4.08 + 1.7)}{0.8 \div 0.16} =$$

3. Change $33\frac{1}{3}\%$ into fraction

4. A lady spent $\frac{1}{4}$ of her salary on transport, $\frac{1}{2}$ of the remainder on food. She later spent $\frac{1}{3}$ of what remained on rent. If she was finally left with sh. 20,000, how much did she spend on rent?

**5.** How many 375g packets can be packed from 3 tonnes?

**6.** The diagram represents a plot. It was fenced using posts at intervals of 3m. How many poles were used if a gate of 6m was left?

108m

84m

6m

**7.** Soda bottles are packed in crates each containing 24 bottles. A shopkeeper had 568 bottles of soda which he packed in crates. How many more bottles must he buy so that all the crates are full?

**8.** The surface area of an open cube is 2.45cm². Find its volume.

**9.** After an increase of 20%, a worker's salary became sh. 38,400. What was the salary increase?

**10.** The diagonals of a rhombus measures 16cm and 12cm. What is the perimeter of the rhombus?

**11.** What is the value of _____

$\frac{1}{2}$ of $3\frac{3}{4}$ + $13\frac{3}{5}$ − $4\frac{1}{2}$ × $2\frac{2}{3}$ =

12. In a certain school, the fraction of girls in classes 1, 2, 3 and 4 are as follows: -

Class One    - $\frac{2}{3}$

Class two    - $\frac{3}{8}$

Class three  - $\frac{3}{5}$

Class four   - $\frac{3}{4}$

Which class has the largest number of boys if the classes have the same number of pupils?

13. Round off 359079 to the nearest thousand.

14. Work out

(a)  $\dfrac{0.63 \times 0.035}{0.9 \times 0.07}$ =

(b)  $\sqrt{\dfrac{64 + 15^2}{(169 - 12^2)}}$

15. If $\dfrac{x + 4}{3}$ and $\dfrac{2(3x - 3)}{8}$ have the same value, what is half the value of x?

16. Find the area of a pipe whose diameter is 2.1cm and height is 8m

17. Arrange in descending order

$\frac{2}{3}, \frac{2}{9}, \frac{3}{5}, \frac{5}{8}$

18. Three candidates, Kamau, Musyoka and David contested in an election. Musyoka got $\frac{6}{25}$ of the votes while Kamau got 36% of the votes. David got 0.6 of the remainder and 48 votes were spoilt. How many less votes than Musyoka did Kamau get?

19. A field measures 100m by 50m. It was reduced to 75m by 40m. What was the percentage decrease in area?

23. What is the area of a square garden whose perimeter is 64m?

20. The area of a trapezium is 48cm². One of the parallel sides is 7cm. The perpendicular distance between the two parallel sides is 6cm. Calculate the length of the other parallel side.

24. Boiling water was cooled at the rate of 4°C per minute for 15 minutes before being heated at the rate of 8°C per minute. Calculate the temperature after 20 minutes.

21. Tap A can fill a tank in 5 minutes. Tap B can fill the same tank in 8 minutes. Tap C can empty the same tank in 10 minutes. If the tank was empty and all the taps were opened at the same time, how long did it take for the tank to be full?

25. How many days were there between 19th February 2000 and May 27th the same year?

26. Find the difference between the largest number and the number with the least value in
(90990, 90099, 90909, 99900)

22. Complete the statements
(a) All the exterior angles of a triangle add upto _____

(b) _____ is the quadrilateral with only one pair of parallel sides

27. A matatu covers a distance of 540km in one day. It consumes one litre of petrol every ℓkm. If petrol costs sh. 95 per litre, how much money is spent on petrol in 8 days?

28. Mukaru bought onions, garlic and oranges for sh. 66. The cost of onions and garlic is sh. 40 while the cost of garlic and oranges was sh. 43. What is the cost of garlic?

29. Write 100202.08 in words

30. What is the next number in the sequence?
3, 10, 5, 12, 7, 14, 9, 16, 11, _____

31. Find the difference between the HCF and LCM of the numbers 24, 36, 108.