## TEST PAPER 21
SECTION: A

1. Simplify $(3.4 + 7.6) \div 0.2$

2. Solve for x: $5x + 6 = 2(x + 3)$

3. What number is half way between 13.674 and 23.42?

4. Express 0.075 as a fraction in its lowest terms.

5. A boy faces in the direction of S.E and turns clockwise through $1\frac{1}{2}$ revolutions. In which direction is he facing?

6. What is the size of an angle whose supplement is one third the size of itself?

7. The density of water is $1g/cm^3$. Convert it to Kg/m^3.

8. The diagram represents a cardboard in form of a square 14cm partitioned into 4 equal squares of side 7cm. 2 quadrants are sewn off as shown. Calculate the area of the shaded part.

9. Convert $2500cm^3$ to litres.

10. Write down the next number in the sequence:-
$$\frac{1}{3}, \quad \frac{1}{6}, \quad \frac{1}{12}, \quad \frac{1}{24}, \quad \underline{\quad\quad}$$

11. In a class of 45 pupils, 36 are boys, what percentage of the class are girls?

12. Solve $0.5x - 4 = 7$

13. Calculate the value of y in the diagram below.

14. What number when multiplied by $^2/_3$ gives the answer 1?

15. If 80 is increased by $x\%$, it becomes 144. Find the value of x.

16. Walking at 80m per minute, Martha took 50 minutes from her home to school. How far is her home from school in Km?

17. The total age of three children is 32 years. The middle child is three times as old as the youngest. The oldest is four times as old as the youngest. What is the age of the oldest child?

18. An equilateral triangle has a perimeter of 15cm and one side is $(3x - 1)$cm. Find the value of x.

19. In the figure below, AB//CD. Find the value of y.

20. Express 50 cents as a percentage of sh 20.

SECTION B

21. In the diagram below, calculate the area of the shaded region, given that AOBC is a semicircle centre O.
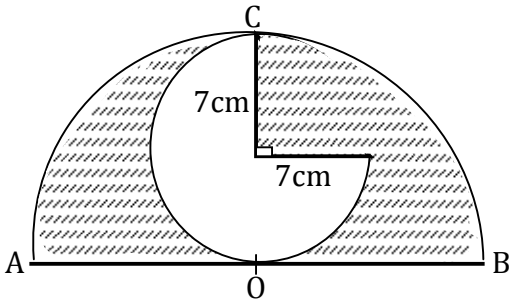
22. The table below shows the marks scored by P.7 pupils of Genesis Primary School in a Mathematics test.

| Scores	50	55	65	70	80	60
No. of Pupils	2	3	7	2	1	5

a) How many pupils are in that class?
b) What was the modal mark?
c) What was the modal frequency?
d) Work out the mean score.

23. Find the distance around the figure below.
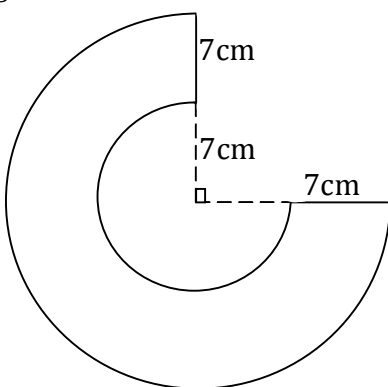
24. Sande bought a radio from Shoprite at hire purchase. He paid an initial deposit of sh 100,000/= and paid sh 9,000/= per month for one year.

a) How much did Sande pay for the radio altogether?
b) If the radio costs sh 150,000/= cash, find how much more money Sande paid for buying the radio at hire purchase instead of paying cash.

25.a) A trouser and a belt cost sh 36,000/=. A trouser costs five times as much as the belt. What is the cost of the belt?

b) Solve for x in the equation $\frac{x}{3} - \frac{x}{5} = 2$.

26. The diagram below represents Kagodo's farm. It is given that he is to fence it with three layers of barbed wire at shs 150 per metre. (Take $\pi = \frac{22}{7}$). Find his total expenditure.
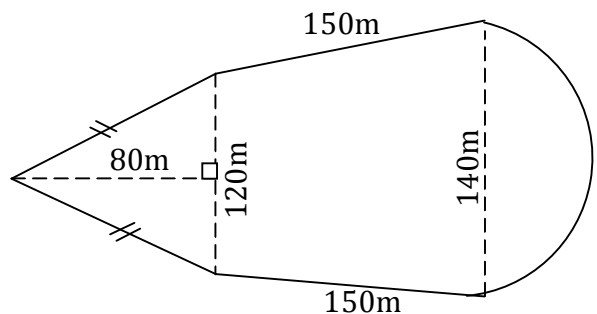

27.a) How many 14 passenger vehicles are required to transport 145 people?

b) On the moon, a man's mass is $\frac{1}{6}$ of what it is on the earth. What is the mass on the moon of a

man who weighs 73.8Kg on the earth?

28. In the diagram below, MXY is a straight line, $\overline{W}X$ is parallel to $\overline{ZY}$ and XZ = ZY.
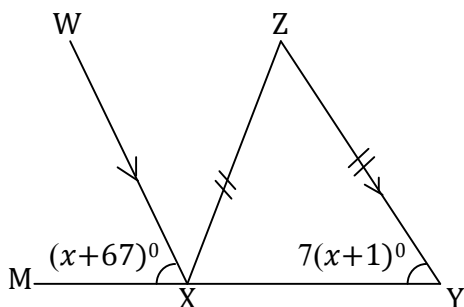

a) Find the value of x in degrees.
b) Find the size of angle WXZ

29. Given that the total surface area of a curved hemisphere is equal to $2\pi R^2 + \pi R^2$ where R is the radius of the hemisphere, calculate the total surface area of the hemisphere below with a diameter of 14cm.

$\leftarrow$14cm$\rightarrow$
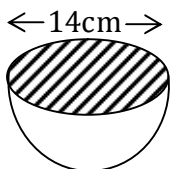
30. The given cylinder is full of water, but it contains a ball of the same radius. How much water will remain in the cylinder if the ball is removed? (Take volume of a sphere to be $\frac{4}{3}\pi R^3$)


21cm

30cm
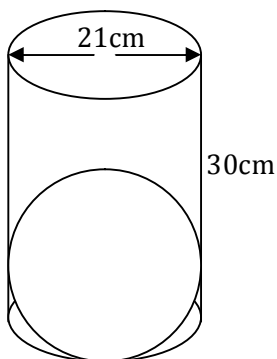
31.a) Mulokole bought a goat and sold it for shs 42,000 making a profit of 25%. How much money did he pay for the goat?

b) The area of a cross-section of a triangular prism is 24 square cm and its volume is 96 cubic cm. What is its height?

32. On the graph, plot points A(0, 0) and B(3, 3). Draw a straight line passing through A and B.

a) State the co-ordinates of two points between A and B lying on the same line.

b) Write down the equation of the above line.
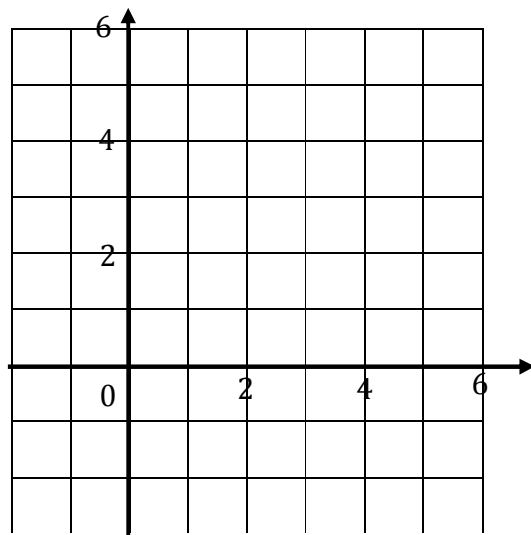
TEST PAPER 22
SECTION: A

1. Write in figures: seven million, seven.
2. Divide $3636 \div 6$
3. Work out $(0.1)^3$
4. Find the 18% discount on a shirt being sold at sh 15,000/=
5. Find the area of the figure below.
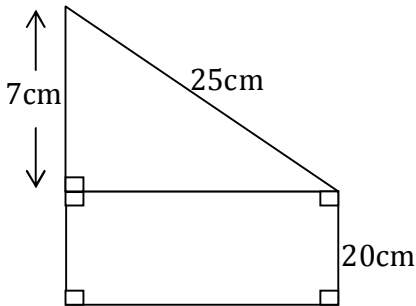
6. A wire 11cm long is used to make a circular ring. Find the diameter of the circular ring.
7. A boy knows that of the 25 eggs in a basket, 5 are bad. If he picks one egg at random, find the probability that it is bad.
8. Simplify $3(3 - 4x) - (1 - 6x)$
9. What is the simplest fraction of the shaded part of the figure below?
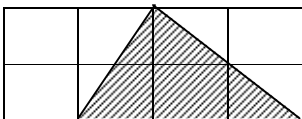
10. Mutabazi has a square garden with sides 300 metres each. What is the area of his garden in hectares?
11. Marion bought a book for sh 15,000 and later sold it at a loss of 20%. How much money did she lose?
12. In a Mathematics test, Mugenyi scores 62.5% and Bindeeba scores 72.5%. Express the difference between their marks as a decimal.
13. What should be subtracted from 12.04 to get 7.69?
14. Work out $8^2/_5 - 6^3/_4 + {}^7/_{10}$
15. A man does a half of his work in fifteen days. How long does he take to do the work?
16. One day Crane Bank was selling 1US Dollar for 1870 Uganda shillings. How many US dollars did Deo get if he exchanged Ug shillings 766,700=
17.
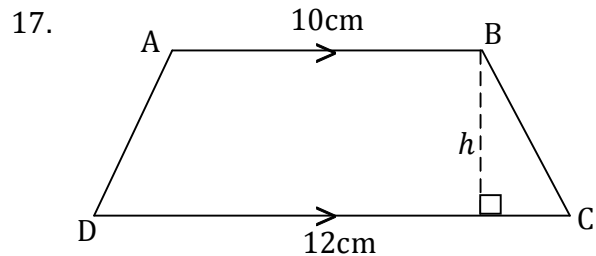
The area of the trapezium above is 66cm². Find the height h.
18. Given that $x^2 + y^2 - ab = 0$, find the value of $x^2 + y^2$ when a = 3 and b = 4.
19. The heart of an adult man beats about 72 times per minute. How many beats will be registered in $1\frac{1}{2}$ hours?
20. Each side of the rectangle below is increased by 5cm.

Find the percentage increase of the area.

20cm

25cm
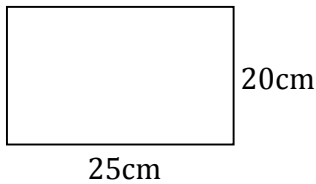
SECTION B:

21. In a Mathematics examination, a candidate plans to spend $\frac{2}{5}$ of the time on section A, $\frac{1}{3}$ of the time on section B, and the rest of the time making corrections. The time for the paper is $2\frac{1}{2}$ hours. How many minutes will be reserved for the corrections?

22. A shopkeeper bought 3 chairs at sh 15,000 each and sold all of them for sh 60,000. Find for each chair:-
   a) The profit.
   b) The percentage profit.

23. On a map, 1cm represents 1,200,000cm on land.
   a) Find in Km the distance which 1cm on the map represents.
   b) Find the actual distance between two towns which are 5cm apart on the map.
   c) The distance between Town P and Town R is 360Km, find the distance between the two towns on the map.

24. Construct a triangle ABC in which $\overline{AB}$ = 5cm, $\overline{AC}$ = 7cm, angle BAC = 60⁰.
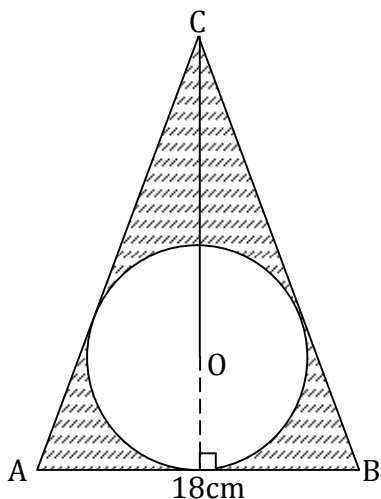   a) Measure $\overline{BC}$
   b) Measure angle ACB.

25.
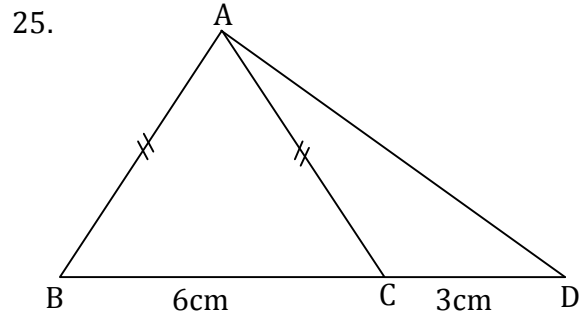
   In the diagram above, $\overline{AB} = \overline{AC}$ and the area of triangle ABC is 30cm². Find:-
   a) The height of triangle ABC.
   b) The area of triangle ABD.
   c) The area of triangle ACD.

26. Water from a 45 litre drum leaks half a litre every 50 minutes. How long will it take (in hours) for the drum to be empty?

27. A man borrows sh 50,000 and has to pay a simple interest of 22½ of per year. Find the total amount he will have to pay at the end of 2 years.

28. A careless pupil added the fraction 2¾ to the fraction 1½ and got the wrong answer $3^3/_8$.
   a) Find the right answer.
   b) Find the difference between your answer and his answer.

29. Calculate the area of the shaded part given that AB = 18cm, $\overline{CO}$ is 13cm and O is the
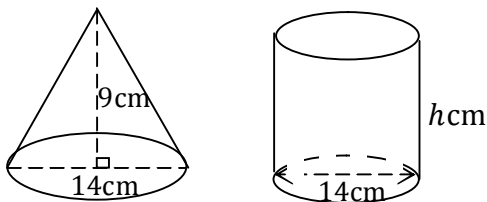
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centre of the circle radius 7cm inscribed in triangle ABC.

30. Using a pair of compasses, pencil and ruler only, draw triangle ABC in which $\overline{BC} = 5cm$, AC = 6cm and angle C is 60^0. Draw perpendicular bisectors of $\overline{AC}$ and $\overline{BC}$ to meet at O. construct a circle with radius OA.
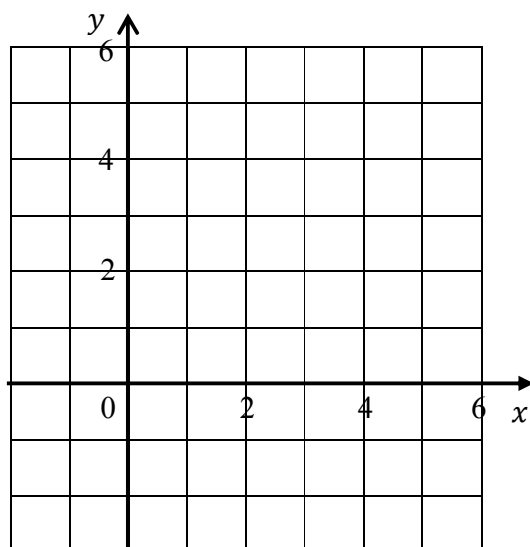   a) Measure angle BAC
   b) Measure OA.

31. The two containers below have the same volume. Find the value of h in cm.

32. Use the graph paper
   a) By filling in the table for the line y = $x+1$ below, draw the line y = $x+1$

x	0	1	2	3	4
y	1				

b) Draw the line $x = 4$ on the same graph.
c) Write down the co-ordinates of the point where the two lines meet.

TEST PAPER 23
SECTION A:

1. Round off 45603 to the nearest thousands.

2. Find the value of P in
$$2^P \times 2^3 = 32$$

3. Solve 0.3t – 3 = 0

4. What is 0.125 of shs 6000.

5. Simplify $\dfrac{0.42 \times 2.4}{0.06 \times 0.7}$

6. Solve $4(x - 2) - 2(x - 3) = 20$

7. Bizibu added numbers in base ten and recorded the answers in base two as shown in the table. Find the values of x, y and z.

+	1	2	3
0	1	10	11
1	x	11	y
2	11	100	101
3	100	Z	110

8. $^3/_5$ of a number is 123. What is the number?

9. It is now 11.45a.m. How many revolutions will the minute hand have made when it is 2.15p.m?

10. The angles of a triangle are x^0, $(x+30)^0$ and $(x-15)^0$. Find the size of the largest angle.

11. A man takes 40 minutes to cover a distance of 72Km. Find the speed in metres/second.

12. Find the area of the trapezium in the diagram below.
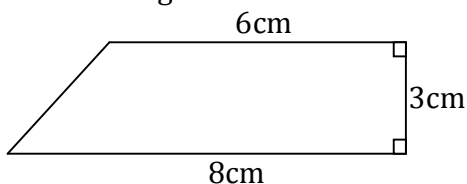
13. A helicopter was expected to land at Rwentobbo Airstrip at 11:55a.m. It instead landed at 12:15p.m. How many minutes late was it?

14. Multiply 5m 30cm by 4.

15. Three boys are given sh 64,000 to share in the ratio 2:3:11. What is the largest share?

16. From a piece of string (W+x) metres long, a piece (50W– 50x)cm is cut off. How many metres are left?

17. Find the value of x in the diagram below.
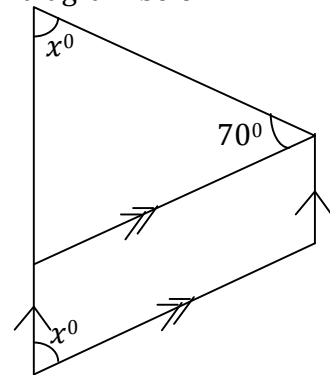
18. In a restaurant a meal for 3 people costs sh 10,500/=. How much does a similar meal for 5 people cost?

19. The lines y = 3x and y = x + 4 intersect at A. Find the coordinates of A.

20. Given that P $*$ q stands for $4q - \frac{1}{2}$P, find the value of 4$*$1

SECTION B

21.a) There are 48 pupils in a class. The girls out number the boys by 2 to 1. How many boys are there in the class?

b) The wheel of a racing motorcycle has a diameter of 70cm and its speed is 132Km/hour. Find the number of revolutions the wheel makes per minute.

22.a) What is the value of $x+y+z$ in the series 1, 3, 6, 10, x, y, z.

b) If shs 24,000 is divided between Hellen and Evelyn, Hellen takes a third as much as Evelyn. How much does Hellen get?

23. A man walks 14 kilometres in 4 hours.

a) How many kilometres does he walk in 1 hour?

b) How long does he take to walk 21 kilometres?

24. A thread 44m long is wound 50 times around a cylindrical tin. Calculate the diameter of the tin in cm.

25. Find the area of the shaded part in the diagram below.
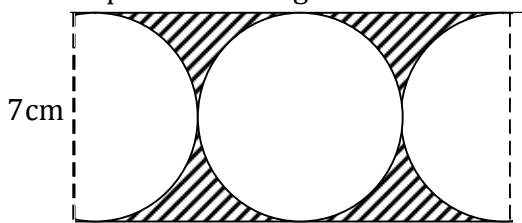
26. Calculate the volume of the figure below (Take $\pi=\frac{22}{7}$)
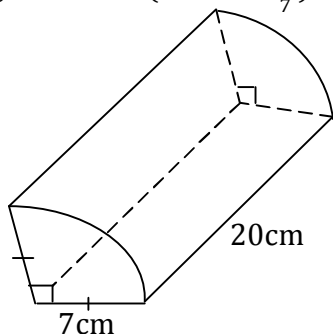
27. A grocer bought 500 eggs at shs 250 for two eggs; 65 got broken, and he sold the rest at sh 150 each. Find his profit.

28. A car uses 2 litres of petrol when it travels 23 kilometres. How much will Juma spend on petrol at shs 2200 per litre on a journey of 184 kilometres?

29. A man is at O. He walks 12Km eastwards, then 6Km southwards, and finally 4Km westwards to Q. Find by scale drawing:-

a) His final distance from O.

b) Using a protractor, work out the bearing of O from final position Q.

30.a) How long does the minute hand of a clock take to turn through 300^0.

b) Through what angle does the hour hand turn in that time?

31. A rectangle has one side 8cm long and the diagonal 17cm long.

a) Find the length of the second side.

b) Find the area of the rectangle.

32. The area of the shaded sector (part) in the diagram is 15.4cm². Find the distance AB on the shaded part.
(Take $\pi = \frac{22}{7}$)
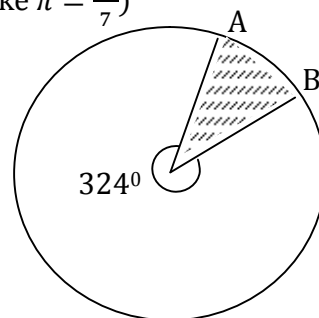
TEST PAPER 24
SECTION: A

1. Divide 0.000121 by 11
2. Simplify $4x - 2\frac{1}{2}x$
3. Arrange in ascending order 1.5, 0.15, 0.105, 0.51.
4. Find the next number in the sequence 21, 13, 7, 3, ____
5. The bearing of M from K is 050^0. What is the bearing of K from M?
6. if a car was travelling at 60Km/hr. What distance did it cover in 20 minutes?
7. If I sell my pair of shoes at sh 35,500, I shall gain sh 6700. How much did I pay for it?
8. Find the average of 6.5, 4.5, 10, 4 and 5.
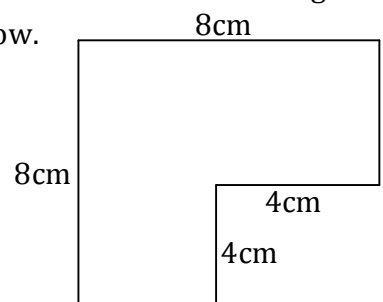9. Calculate the area of the figure below
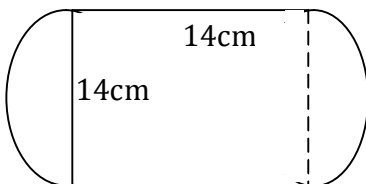
10. If 2.05 metres of cloth are required for a shirt, how many shirts can be made from a roll of 22.55 metres long?
11. Solve $\dfrac{(x+1)}{2} = \dfrac{(3x-1)}{4}$
12. In the figure below, OPQ is $\frac{1}{4}$ of a circle. Calculate the perimeter of the figure MNOPQ.
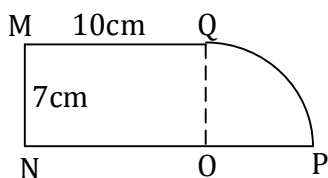
13. Find the next number in the sequence:-
$49\frac{1}{2}$, $25\frac{1}{2}$, $13\frac{1}{2}$, $7\frac{1}{2}$, $4\frac{1}{2}$, ____
14. What same number must be added to the numerator and the denominator of the fraction $\frac{8}{12}$ to make a new fraction equal to $^3/_4$?
15. In Nyarwashama Primary School, the boys are 60% and there are 120 more boys than girls. How many children are there in the whole school?
16. A bus travelling at 40Km/hr can complete a journey in 9 hours. How long will it take the car to do the same journey travelling 5Km/hr faster?
17. The pie chart shows how a man spends his money. If he spends shs 40,000 on food, how much does he save?
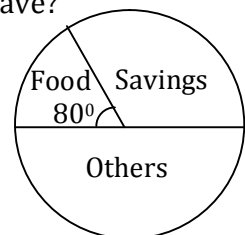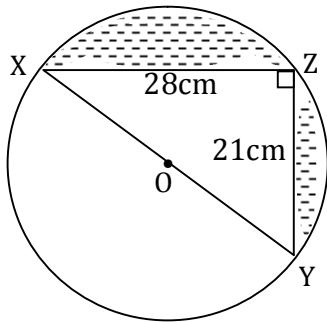

18. Simplify $(-3)(-6) - (-4)$
19. Paul is 4 years older than brother Peter. If their total age is 20 years, find the age of Peter in 4 years time.
20. Find the area of the figure below.

SECTION: B

21. In the figure below, O is the centre of the circle with diameter XY.

XZ = 28cm and ZY = 21cm.

i) Find the length of XY.
ii) Find the area of the triangle XYZ.
iii) Calculate the area of the shaded part.

22. Two cyclists Xavier (X) and Yaguma (Y) are moving towards each other. Xavier is moving at a speed of 14Km/hr and Yaguma at a speed of 10Km/hr. If Xavier starts at town P and Yaguma at Town Q at the same time, a distance of 36Km apart;

a) After how many kilometres from P will they meet?
b) If both cyclists start at 8:30a.m, at what time will they meet?

23. A tank is formed by joining a funnel like container (Cone) to a hemispherical bowl as shown in the diagram. Calculate the volume of the tank.

(Take $\pi = \frac{22}{7}$) N.B volume of sphere $V = \frac{4}{3}\pi R^3$ and volume of a cone $= \frac{1}{3}\pi R^2 h$
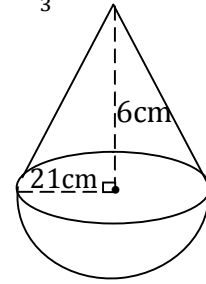

24.a) Write down all the numbers containing two digits chosen from the set {2, 3, 4} with no digit repeated.

b) If a number is chosen at random from those you have written in (a) above, what is the probability that it is divisible by 3?

25. A journey by bicycle takes me 10 hours. For the first 6 hours, my speed is 13Km/hr and for the last 4 hours my speed is 8Km/hr.

a) Find the length of the journey.
b) Find the average speed for the whole journey.

26. The hemispherical helmet shown below is made of thick material. Find the volume of the material used. (Use $\pi = 3.14$ and volume of sphere to be $\frac{4}{3}\pi R^3$).
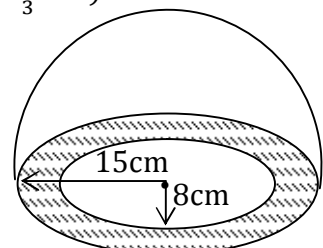
27. The circumference of the circular ends of a cylinder is 44cm, the height of the cylinder is 11cm.
   a) Calculate the radius of the cylinder.
   b) Calculate the volume of the cylinder.
   c) Calculate the total surface area of the cylinder.

28.
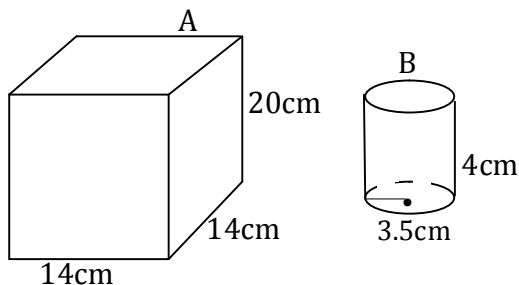
Given that the cylindrical tin B of base radius 3.5cm, is to be packed in Box A:-
   i) How many tins will be packed in the box?
   ii) If container A is a tank full of water, how many full cups of container B can you draw from the tank?
   iii) How much water will remain after taking away the number of full cups?

29. The table below shows the number of litres of milk collected by Mugaga on his farm in a week.

Day	Mon.	Tues	Wed.	Thurs.	Fri	Sat.	Sun
No. of litres	20	10	15	15	5	25	15

Using the grid below draw a bar graph for the above information.
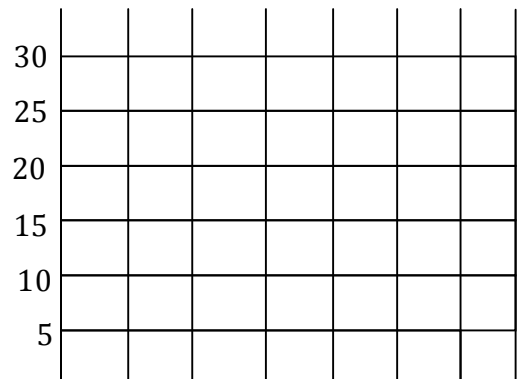
   a) What is the range of milk production?
   b) Calculate the average number of litres of milk produced per day.

30.a) There were 45 passengers in a bus one afternoon. At one stop, 10 passengers got into the bus and 5 went out; at the next stop, 6 entered and 4 went out. How many passengers were in the bus after the second stop?
   b) Mungereza bought P mangoes but q% of them were bad. How many mangoes were not bad?

31. Mwebesa buys a goat for sh 30,000. He sells it to Rwozi at a profit of 20%. Rwozi sells it to Kandeebe at a loss of 10%.
   a) How much does Rwozi pay for it?
   b) How much does Kandeebe pay for it?

32. The graph shows the percentages at which pupils have been passing P.L.E at Ruhara Primary School.
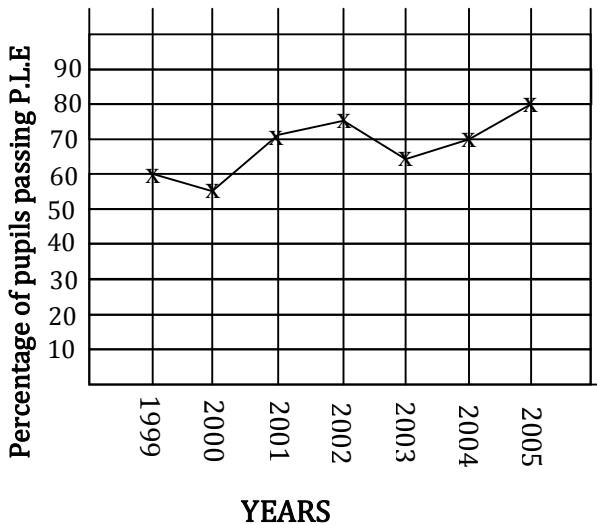

a) In which year was the greatest improvement shown?
b) What was the highest performance?
c) Which two years had the same performance?
d) If in 2005, 60 pupils sat for P.L.E, how many failed?

TEST PAPER 25
SECTION: A

1. The bearing of P from R is 230^0. What is the bearing of R from P?

2. How many cubes of $\frac{1}{2}cm^3$ volume are contained in a cube of $2cm^3$ volume?

3. The probability of a football team winning a game is $^2/_5$. If the team plays 20 games, how many games is the team expected to win?

4. The three interior angles of a triangle are in the ratio 3:4:5 respectively. Find the size of the largest angle in degrees.

5. 8% of a number is 640. What is the number?

6. Subtract $(3y – 3)$ from $(y – 1)$.

7. A farmer Banked two million shillings in Stanbic Bank. If he banked 5,000 shilling notes only, how many notes did he bank?

8. In the diagram below, OK is parallel to RS. Find the value of P.
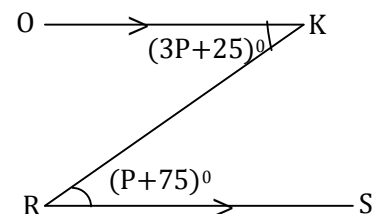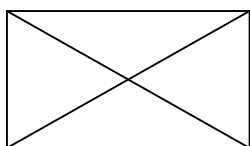

9. Find the size of one of the exterior angles of a regular octagon.

10. Given that:-
X = {Prime numbers less than 10}
Y = {Multiples of 2 less than 10}
Find n(X∪Y).

11. What should be added to three hundred ninety seven thousand, eight hundred one to make half a million?

12. How many triangles can be seen in the figure below?

13. What is the value of
0.3 of 2.4 + 3.6 – 1.2 ÷ 0.4?

14. Find the size of the angle marked a in the figure below.
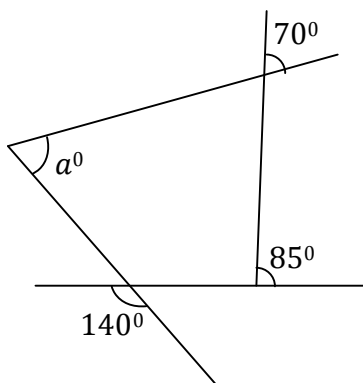
15. Kafeero deposited sh 100,000 in Barclays Bank which pays compound interest at the rate of 20% p.a. Kafeero collected all his money at the end of two years. what was the total interest earned?

16. Simplify: $\frac{3}{5} - \frac{2}{3}$ of ¾

17. The table below shows the summary of the best selected number of participants for each house.

HOUSES	ZEBRA	LION	TIGER
No. of Participants	4	15	18

If the headteacher of the school gives out equal prizes to each house to be shared by best participants; find the least number of prizes that would be given to the best participants share without any remainder.

18. A tailor made four different sizes of girls' dresses as follows:-
180 dresses each requiring 2m
200 dresses each requiring 2½m
120 dresses each requiring $2^3/_4$m
32 dresses each requiring 3m.
How many metres of material did he use for making all the dresses?

19. A school bus carried 12 passengers on each trip. The table below shows the number of trips made by the bus in five days.

| Day	No. of trips
Monday	10
Tuesday	8
Wednesday	7
Thursday	8
Friday	12

What was the mean number of passengers in one day?

65

20. The marked price of a bicycle was 75,000 shillings. The hire purchase price was 120% of the marked price. Mbiire bought the bicycle on hire purchase terms. He paid a deposit of shs 30,000 and the balance in monthly instalments of shs 7500 each. In how many months did he pay the balance?

SECTION: B

21. In a class of 80 pupils, 40 like English (E), x like Mathematics only. 20 like both subjects and 8 do not like any of the two subjects.

   a) Use the information given above to complete the venn diagram below.

   $$\mathcal{E} = 80$$
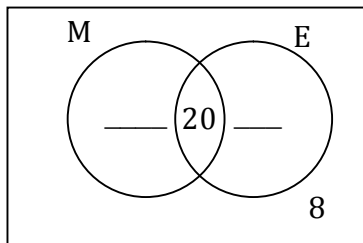
   b) Find the value of x.
   c) How many pupils like Mathematics altogether?

22.a) Using a ruler, a pair of compasses and a pencil only, construct a triangle ABC where line AB = 6.5cm, angle CAB = 60^0 and angle ABC = 75^0

   b) Measure the length BC.

23. Mukwasi bought the following items from a shop:-

   i) 2 bars of soap at sh 2,500 per bar.
   ii) 2½Kg of sugar at sh 3,600 per Kg.
   iii) $\frac{3}{4}$Kg of salt at sh 1,200 per Kg.

   a) What was his total expenditure?
   b) If he had sh 20,000, how much did he remain with?

24. A cylindrical tin of radius 7cm contains 3850cm³ of cooking oil.

   a) Chef uses 2926cm³ of the cooking oil. What is the height of the cooking oil remaining in the tin? (Take $\pi = \frac{22}{7}$)

   b) Chef pours the remaining cooling oil into a rectangular tin with base area 42cm². What is the height of the oil in the tin?

25.a) Solve $\frac{1}{2}P + 6 = 8$

   b) Solve the inequality:
   $4x + 9 < x - 3$

26.a) The interior angle of a regular polygon is 36^0 more than its exterior angle. What is the size of each interior angle?

   b) In the figure below, AB is parallel to CD, angle OAB = 128^0 and angle OCD = 135^0. Calculate the size of angle X.
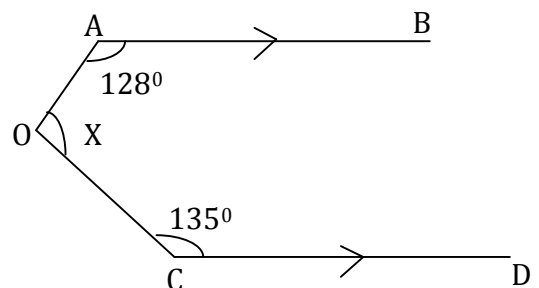
27. In Rubaare Primary School, $\frac{1}{4}$ of the pupils in P.7 like Mathematics, $\frac{2}{3}$ of the remainder like Science. The rest of the pupils like English. If those who like English are 30, find the total number of pupils in P.7.

28.a) Change 14_{five} to base two.

b) The ratio of cement to gravel for a certain work is 1:3 respectively. How many bags of cement should be mixed with 9 bags of gravel?

29. Carefully study the diagram below and use it to answer the questions that follow.
Line AB = OC and AO = OD = BC.
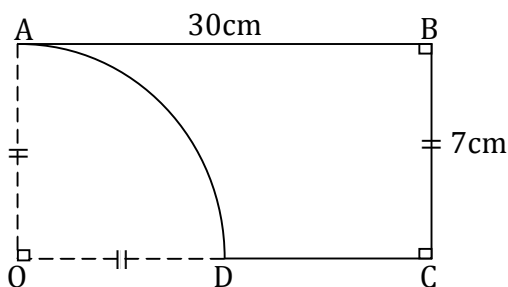
a) Find the length of arc AD.
(Take $\pi = \frac{22}{7}$)

b) Work out the perimeter of ABCDA.

30.a) By selling a book at sh 800, I lose 20%. At what price should I sell it if I am to gain 25%.

b) Okoth bought a gross of books at sh 25,000. He sold every 2 books for sh 500. Find his profit.

31. A man's salary was increased by 20% to sh 300,000 per month.

a) What was the man's monthly salary before the increment?

b) If 5% of his new salary is subtracted as tax, what is his final salary?

32. Malinga left Kampala at 8:00a.m driving a lorry at an average speed of 50Km/hr for 2 hours to Jinja. He rested for one hour at Jinja, then continued to Tororo at an average speed of 60Km/hr for another 2 hours.

a) Draw a graph showing Malinga's journey.

b) Calculate Malinga's average speed for the whole journey.
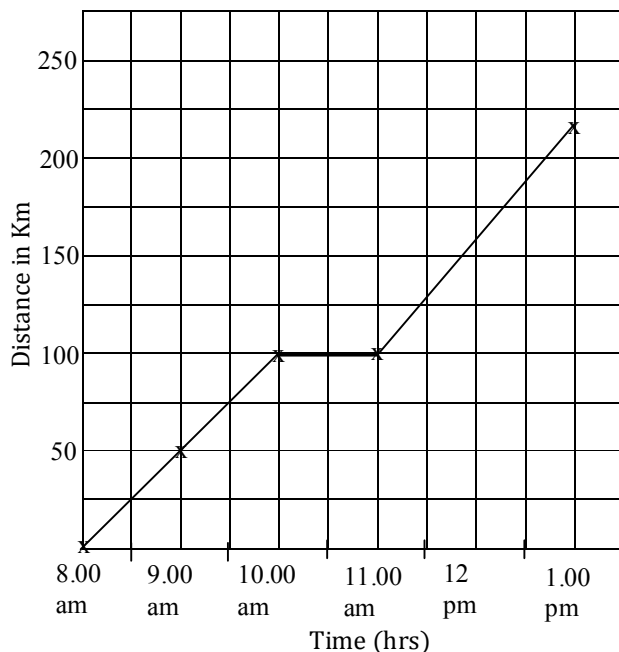
TEST PAPER 26
SECTION: A

1. Find the difference between $\frac{1}{4}$ and $\frac{1}{6}$.

2. A cylinder has a volume of 1232cm³ and a base area of 154cm². What is its height?

3. After an increase of 25%, the price of a radio is shs 12,000. What was the price before the increase?

4. $a * b$ denotes the number $\frac{a}{b} + \frac{b}{a}$ for all values of a and b except $a = 0$ and $b = 0$. Evaluate $2*3$.

5. Find the value of a in degrees.
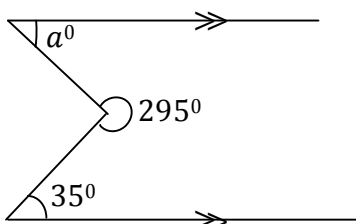
6. I throw a die marked 1, 2, ... 6 and a coin. What is the probability that I shall get a "4" and a "head"?

7. What is the area of the shaded part in the figure below?

   (Take $\pi = \frac{22}{7}$)
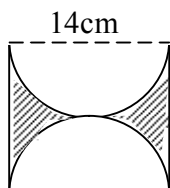
8. What is the additive inverse of 0?

9. Change 5cm to mm.

10. Express 87_{ten} to base eight.

11. The graph below shows part of Mugumya's 70Km journey. After the one hour rest, he continued at the same speed. At what time did he complete the journey?
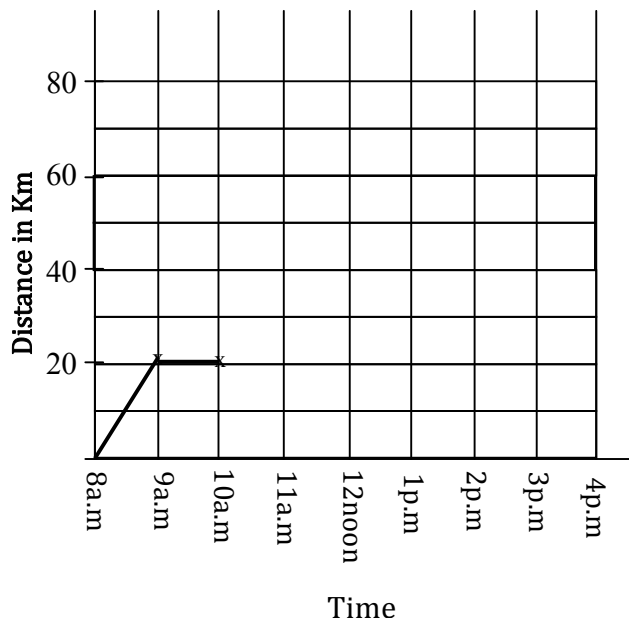

12. Solve for x: $\frac{8}{3} + 2\frac{(3x-10)}{3} = 4$

13. A business woman bought 10 bags of maize at sh 15,000 each. She paid sh 1500 per bag for transport. She later put the maize in 9 larger bags and sold each bag at sh 17,000. How much loss did she make?

14. Seven pupils sat for a test. Three of them scored 42 marks each. The other four scored 53, 55, 50 and 45 marks. What was the median score?

15. Wamala and Mumpe each made a 20Kg mixture of maize and beans. Wamala mixed the maize and beans in the ratio

3:2. Mumpe mixed the maize and beans in the ratio 1:3. How many more kilograms of beans did Mumpe use than Wamala?

16. A bucket contains 3 raw and 6 ripe mangoes. What is the probability of picking a ripe mango at random?

17. Below is an isosceles triangle. Calculate its perimeter.
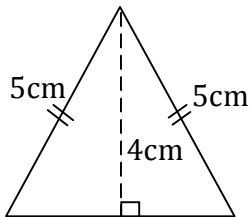
18. Francis deposited sh 160,000 into Stanbic Bank which offers a 19½% interest per annum. How much interest will it yield after 3 months?

19. Kora and Tinka set off from their school to the market. Kora cycled at a speed of 18Km/hr and took 40 minutes to reach the market. Tinka walked and took 2 hours to cover the same distance. What was Tinka's speed in Km/hr?

20. In the figure below, BD and AC pass through O the centre of the circle. Angle ACD = 65⁰. Find the size of angle ADB marked y.
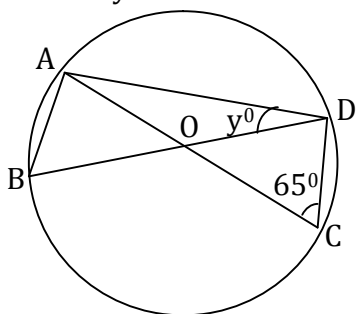
SECTION: B

21.a) Express 30cm as a percentage of 12 metres.

b) What is the volume of a cuboid whose base area is 24cm² and height is 10cm?

22.a) The average weight of 6 girls is 45Kg. When a seventh girl joins them, the average weight becomes 44Kg. What is the weight of the seventh girl?

b) Find the value of x in the diagram below.
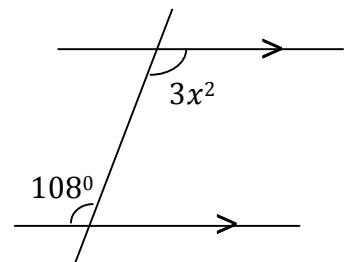
23.a) Find the volume of a pit latrine 30m deep by 8m wide and 10m long.

b) Out of 80 pupils who sat for an examination, $3/4$ of them passed. Calculate the percentage that failed.

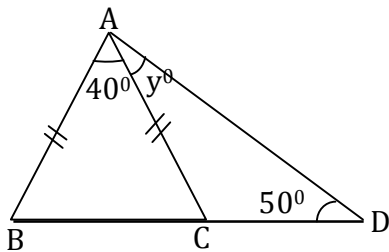24.a) How many days altogether have July, August and September?

b) Calculate the speed of a car that covered a distance of 48Km between 8:30a.m and 9:10a.m.

25.a) Express $6\frac{1}{2}\%$ as a decimal fraction.

b) Solve $3^{2x} = 9$

26.a) Increase sh 80,000 by 10% and then by 20%.

69

b) In the diagram below AB = AC. Find the value of y.

27.a) Write in powers the L.C.M of 2^3 x 3^2 x 5, 3^3 x 5 and 2^2 x 3^2 x 5^2 x 7

b) Convert 243_{eight} to base ten.

28.a) If $x = 4$ is a solution of the equation $3x^2 + 8 - yx = 0$, find the value of y.

b) In a class of 30 pupils, 22 like history and 18 like French. How many like both?

29.a) Find the cube root of 3^6 x 4^3.

b) Calculate the perimeter of the shape given below (Take $\pi = 3.14$)
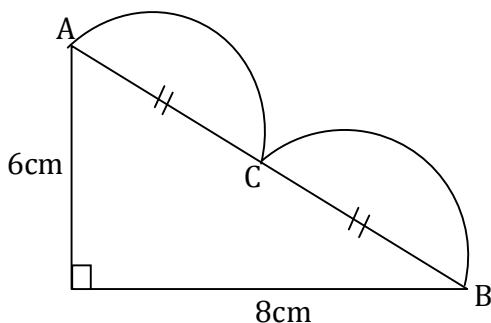
30.a) If I pick a letter at random from the set of letters of the English alphabet, what is the probability that it is a vowel?

b) What is the difference between 0.75 and 0.075?

31.a) If n(P) = 10, n(Q) = 19 and n(P∪Q) = 24, what is n(P∩Q)?

b) What is the average age of 3 children who are $12\frac{1}{2}$ years, 5 years and 6 months old respectively?

32.a) What is the circumference of a circle whose area is 616cm²?

b) In the diagram below, ABCD is a parallelogram. Calculate the size of angle a.
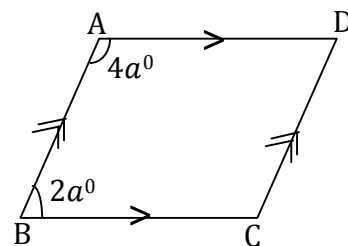
TEST PAPER 27
SECTION A

1. Find the lowest common multiple (L.C.M) of 50, 75 and 125.

2. Write the number 766945 correct to the nearest thousand.

3. The area of a rectangle is 154cm². If one side is 14cm, find the second side.

4. Musa and Jackie share 100 sweets such that Musa gets 4 times as much as Jackie. How many sweets does Musa get?

5. Find the total surface area of the closed box below.
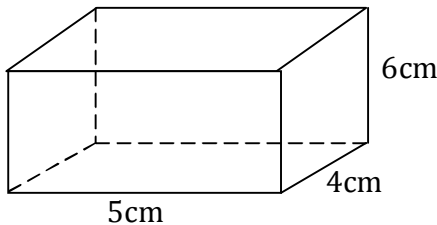
6. Find the side of a square whose perimeter is 32cm.

7. Arrange the fractions in ascending order of magnitude $\frac{9}{10}, \frac{5}{6}$ and $\frac{4}{5}$.

8. 90% of a number is 360. What is the number?

9. A liquid weighs 800gm per litre. Find how many cm³ of the liquid that weigh 1 kg.

10. $a * n$ denotes $a + 7n$. Write down the value of $2 * 3$.

11. How many degrees are in two and half right angles?

12. m^0 and $5m^0$ are supplementary angles. What is the value of m in degrees?

13. A cube has a volume of $8a^6 y^3$. What is the length of its side?

14. Simplify 3^{2x} x 9^{2x}

15. Find the area of the base of the cuboid below.
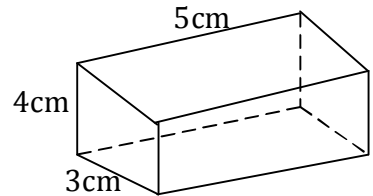
16. How many millimetres are in $\frac{3}{4}$ of a metre?

17. What is the cost in shs of 200 fifty cent stamps?

18. Given that $a = \frac{1}{2}$, what is the value of a^3?

19. If a boy faces north and turns through 135^0 clockwise, in which direction is he facing?

20. In the diagram below, ABCD is a square of side 6cm. DP is parallel to CQ. Find the area of the parallelogram PQCD.
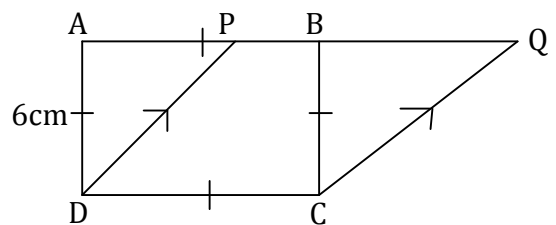

SECTION B

21. a) If $K^2 = 1.44$, what is the value of $3k + \frac{1}{2}k$?

b) What is x if x% of sh.6000 is sh.1200?

22. a) What base six numeral is equivalent to 11011_{two}?

b) Find the difference between the values of 6 and 9 in the number 2.69.

23. a) Find y if $y^3 = 2\frac{10}{27}$

b) Solve for x in the equation:-

$$\frac{x + 1}{3} = \frac{x + 2}{4}$$

24. a) Find the distance travelled in t hours at an average speed of $(2S + 3)$ km/hr.

b) Sanyu is 10000_{two} years old. Tom is 21_{four} years older than Sanyu. What is their total age in decimal numeral?

25. a) How many days are in a leap year?

b) Solve $-3x = -36$.

c) How many seconds are in one hour?

26. a) What is simple interest on sh.60,000 for 2 years at 5% per annum?

b) A piece of wire is bent to make two semicircles on a metal frame AB as shown. Find the length of the wire.
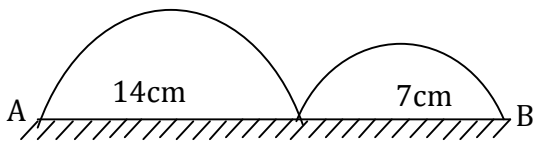
27. a) If $y + 0.3 = 1.04$, find the value of y.

b) Find the value of x in the diagram below.
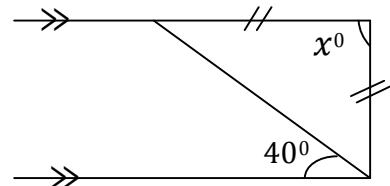
28. a) Find the square root of

$3^2 \times 4^2 \times \left(\frac{1}{2}\right)^2$

b) What is the value of the angle between N20⁰E and S75⁰E?

29. a) A watch gains 12 seconds in a week. How many hours will it gain in 5 weeks?

b) Calculate the value of x in the figure below.
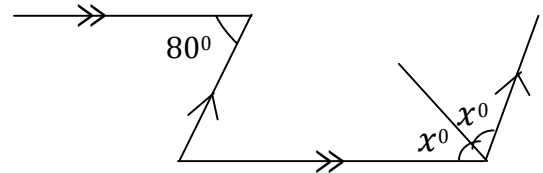
30. a) What simplest fraction is equivalent to

$30\% + 20\% + 10\%$?

b) During a football match, tickets were sold from FC 629424 to FC 629523. A quarter of the tickets were sold to women at sh.1,000 per ticket and the rest to men at sh.2500 per ticket. How much money was collected altogether?

31. a) What is the next term in the sequence 54, 18, 6, 2,_____?

b) If y stands for 5 minutes, what time is it $(8y + 5)$ minutes before 2:30p.m?

32. a) Okello gets 1.25kgs of sugar

from his father and 3.75kg from his auntie. How much sugar does he have altogether?

b) Calculate the area of ABCD given that both ABCD and EFGH are squares.
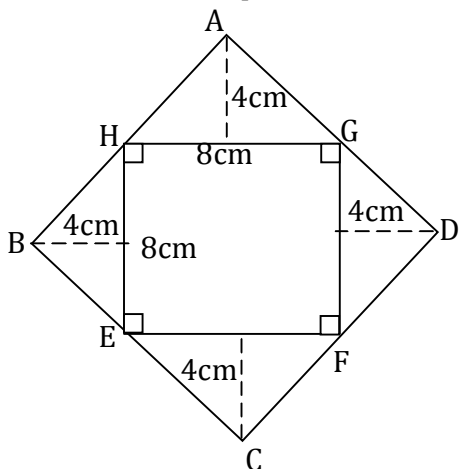
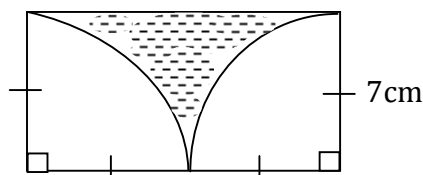1. The mean of 3 fractions is $\frac{5}{9}$. Two of them are $\frac{1}{2}$ and $\frac{3}{4}$. What is the third one?

2. Simplify $\frac{7}{8} + \frac{4}{5}$ of $\frac{15}{16}$

3. Find the area of the shaded part.

4. What is the missing digit $*$ in $33_{five} + *4_{five} = 122_{five}$?

5. Which of these fractions is the largest? $\frac{1}{2}, \frac{3}{4}, \frac{1}{8}, \frac{1}{10}$

6. A forty five minutes lesson ended at 1310hrs. When did it begin?

7. If today is Saturday, what day of the week will be 45days from now?

8. Find the value of y in the diagram.
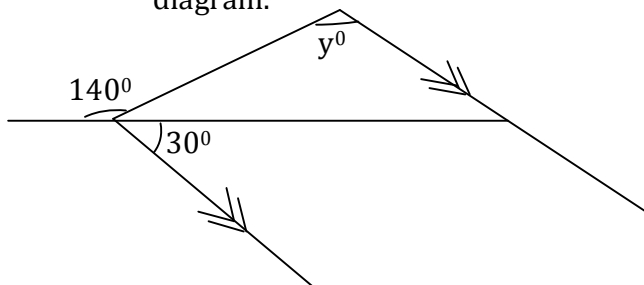
9. A man and his wife shared shs.360,000 in the ratio 1:5 respectively. The woman shared her part with her

mother and daughter in the ratio 3:2:1 respectively. How much did her mother receive?

10. A latrine pit was dug by 3 men in 7 days each of them earning shs.2000 per day. How much money did the three men earn to complete the work?

11. Five out of every dozen mangoes in a basket are rotten. What is the ratio of good mangoes to the rotten ones?

12. Find the size of angle ABC in the given triangle.
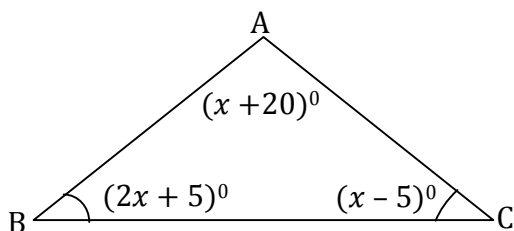
13. Simplify 3q – p – (p + q).

14. 6 books cost p shillings. What is the cost of a dozen similar books in shillings?

15. Calculate the value of x in the venn diagram.
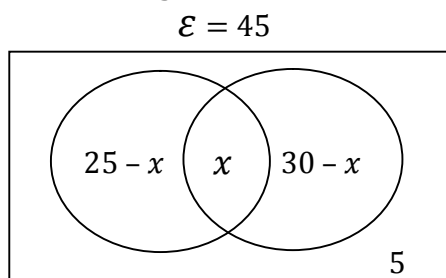
16. What is the size of angle marked C?
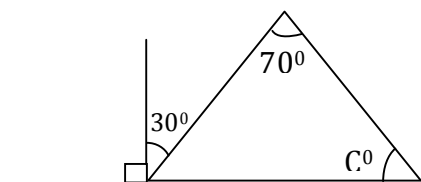
17. Instead of gaining 20%, we lost 30% by selling a radio at shs.28,000. Find the selling price to gain 20%.

18. How many millimetres are in a half decimetre?

19. Calculate the area of the square below if the diagonal is 16cm long.
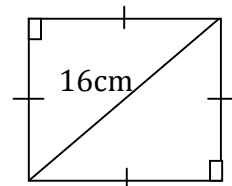
20. A piece of wood is (3y + 7)cm. A piece measuring (y – 1)cm is cut from it. How long is the piece that remains?

SECTION B

21. a) What is the value of the angle between North East and South measured clockwise?

b) Calculate the area of the figure given that ABC is a semicircle
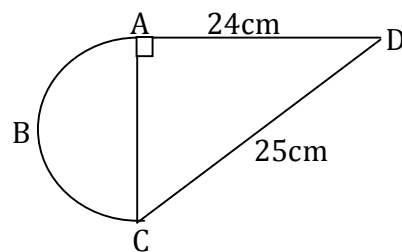
22. a) After losing $\frac{2}{5}$ of her money, Robinah has sh.15,000 left. How much money did she have before the loss.

b)
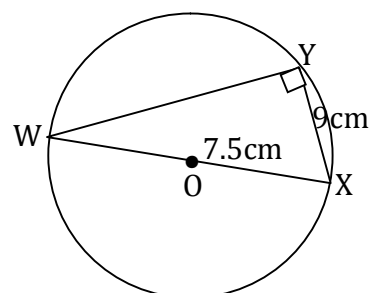
In the figure, WO is the radius of a circle centre O with radius 7.5cm and XY = 9cm. Find the length WY.

23. a) Simplify $\left(\frac{1}{4} + \frac{1}{2}\right) \div \left(\frac{3}{4} - \frac{1}{2}\right)$

   b) Odhiambo is facing North West. He is asked to turn anti clockwise 135^0. In which direction is he facing now?

24. a) Find the difference between the largest and smallest of the fractions $\frac{1}{4}$, $\frac{2}{3}$, $\frac{1}{2}$, $\frac{3}{5}$.

   b) Find the area of the parallelogram below.
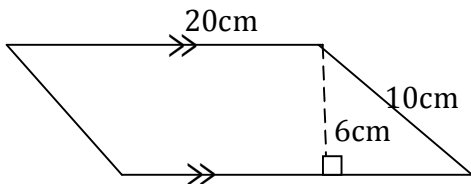
25. a) Town W is 5km north of town X. Town Z is 12km east of town X. Find the distance of W from Z.

   b) A boy scored 65% in two tests. If he scored 58 in one of them, what was his score in the other?

26. a) What must be subtracted from 6.382 to leave 4.291?

   b) In a class, the ratio of the number of boys to the number of girls is 1:3. Find the number of boys if the class has 60 pupils.

27. a) Work out:- $\frac{1}{2} + \frac{1}{2}$ of $\frac{1}{2}$

   b) The sum of money is divided among A, B and C in the ratio 1:2:5 respectively. If B receives shs.5,000 how much does C get?

28. a) Express the recurring decimal 0.393939-------- as a fraction in its simplest form.

   b) In the figure below, find the perimeter of the shaded part.
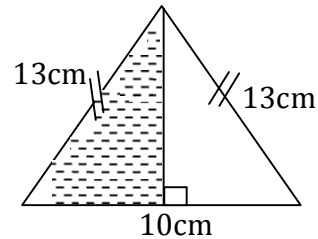
29. a) If $7^{3x} \times 7^{2x} = 49$, find the value of x.

   b) Subtract 0.25 from $\frac{1}{3}$

30. a) An isosceles right angled triangle has an area of 32cm². Find the length of one of the equal sides.

   b) The area of a square piece of cloth is $12\frac{1}{4}$ cm². Calculate the length of one side of the cloth.

31. a) Simplify: $\frac{6\,b^3\,a^2}{3\,b^2\,a^3}$

   b) Find the radius of a cylinder whose volume is 385cm³ and height 10cm. $\left(Take\ \pi = \frac{22}{7}\right)$

32. a) Express 0.008 cubic metres in cubic centimetres.

   b) Use the clock face below to find the product of 3 x 2.
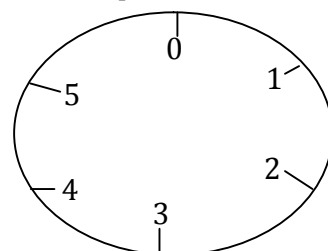
TEST PAPER 29
SECTION A

1. One point on the line $x + y = 3$ is (2, m). What is the value of m?

2. Find the value of angle marked P.
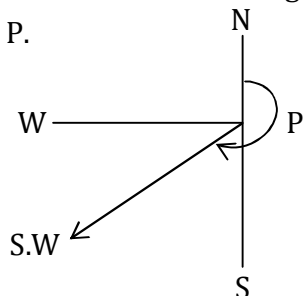
3. Convert 0.101_{two} to base ten.

4. Find the square of 11_{two}

5. The area of a square 1m by 1m is 1square metre. What is this area in square centimetres?

6. A rectangular tank measuring 3m by 2m by 80cm high is full of water. If 3600 litres of water are removed from it, what will be the depth of the water remaining in the tank?

7. The mean weight of 5 parcels is 14kg. The total weight of 3 parcels is 43kg. If the remaining 2 parcels weigh the same, what is the weight of each of the two in kg?

8. $\frac{1}{2}$ of a number and $\frac{1}{6}$th of the same number add up to 8. What is the number?

9. If the area of the given rectangle is equal to the area of the triangle, what is the height of the triangle?
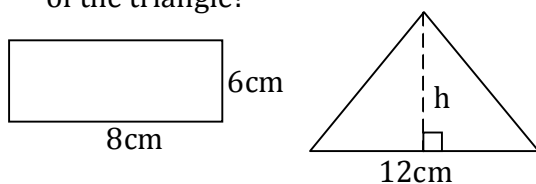
10. What is the height of a cylinder with a diameter of 14cm and capacity of 3.08litres?

11. If p : q = 1 : 3 and q : r = 6 : 7, find the ratio p : q : r.

12. Mubari read $\frac{2}{5}$ of a book on Monday, half of the remainder on Tuesday and had 105 pages left to read. How many pages were there in the book?

13. A metal sheet is 250cm by 150cm. How many open cylinders with 14cm diameter and 21cm height can be got from it?

14. Benon was sent to a shop with enough money to buy 10kgs of posho at shs.850 each, but by mistake he bought 9kgs of millet flour at shs. 900 each. How much money did he remain with?

15. Find the value of y in the diagram.
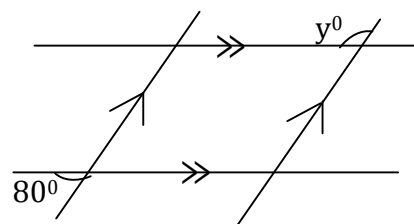
16. For every 100 shillings I save, my father gives me 150 shillings. Find the total amount I will have after saving 2500 shillings.

17. In a class of 48 pupils, $\frac{2}{3}$ are boys. How many are girls?

18. Solve for x in the equation
$3(x-2) = 2(x-4)$

19. How many 0.002 are contained in 2.4?

20. Find the simple interest on shs.100,000 for 1 year at the rate of 18% per year.

SECTION B

21. a) Two angles are supplementary. If one angle is 69^0, what is the other angle?

b) What is the number that is 1 less than 220_{three}?

22. a) If a = 2 and b = 3, find the value of $\dfrac{a^2 b - b^2 a}{a}$.

b) Find the value of n if
$$\frac{3^{4n} \times 3^{-2n}}{3^n} = 3^2$$

23. Given that set X = {Even numbers up to 11} and Y = {prime numbers less than 11}, Find n(X∩Y)

b) A cyclist completed a journey of 50km in 5 hours. For the first 4 hours he was riding at x km/hr and thereafter because it was getting late he increased his speed to 14km/hr. Find the value of x.

24. a) A bag contains 5 red, 8 black and 7 blue pens. What is the probability of picking a black pen at random?

b) The mean score of 4 boys in a test is 7. What is the sum of their scores?

25. a) Describe the shaded region in the figure below.
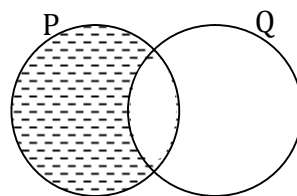
b) Given that $3^x \times 18 = 162$, find the value of x.

26. a) The perimeter of a regular pentagon is 45cm. Find the length of each side.

b) Solve $4(1-3x) = 5(2x+3)$

27. a) Calculate the area of parallelogram ABDE below.
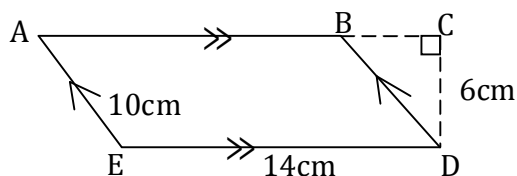
b) If 1m of an electric wire costs shs.30,000, what is the cost of a wire 15cm in length?

28. a) David, Herman and Archi shared shs.24,000 in the ratio of 2 : 3 : 5 respectively. Express the amount David got as a fraction of what Archi received.

b) Using the diagram below, find the bearing of O from B.
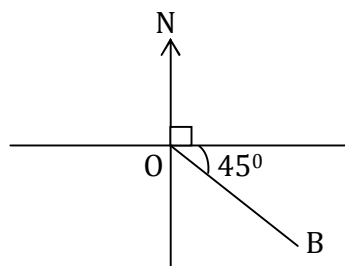
29. a) Mutembeyi walked around his square plot of land of area

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$156\frac{1}{4}$ m². What distance did he walk?

b) Find the area of the triangle below, given that AD = AB = 13cm and BC = CD = 5cm.
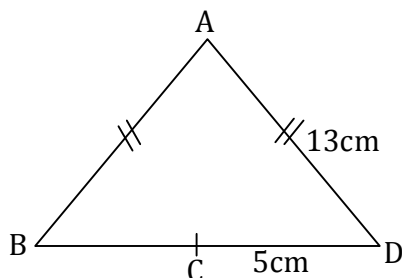
30. a) Arrange in ascending order:-
0.12, 0.212, 0.0212.

b) If 8 men take 6 days to do a piece of work, how many days less will 12 men take if they work at the same rate?

31. a) A man buys 16 metres of a wire. If he makes the wire into a square, find the area of the square.
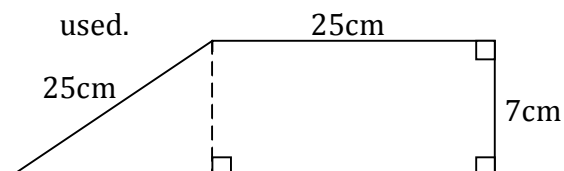
b) Find the area of the shaded part in the figure below.
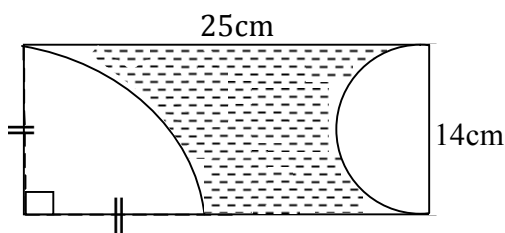
32. a) Subtract a third of (9 – 12y) from a half of (6y – 8).
b) Find the value of x in the diagram.
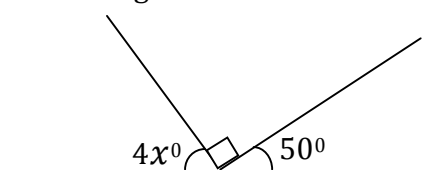

TEST PAPER 30
SECTION A

1. After using 90 litres of water from the tank, $\frac{2}{5}$ of the water is left. How much water was originally in the tank?

2. What is the value of $(M^3 + Z^2)\, y^2$ when m = 1, Z = 2 and y = 0?

3. x mangoes cost 300 cents. What is the cost in shillings of y mangoes?

4. Express 72cm as a percentage of 3.6 metres.

5. There are 144 pieces of chalk in a box. If each of the 35 children takes out 4 pieces, how many pieces are left in the box?

6. When I divide a number by 9, I get the quotient 9 and the remainder 8. What is the number?

7. Paul bent a piece of wire and formed the shape below. Find the total length of the wire used.

8. In an examination, 30% of the maximum mark is 27. What is the maximum mark?

9. Find the area of the shaded part ABCD.
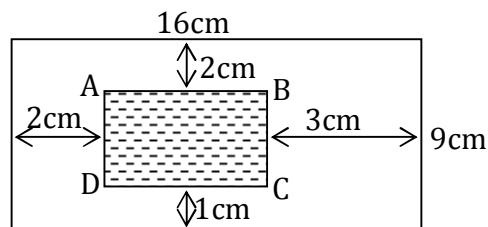
10. A rectangular field is 40m by 20m. It is surrounded by a path 3m wide along the length and 1m wide along the width. Find the area of the path.

11. Express 1011_{two} to base five.

12. Convert into decimal $10t_{twelve}$

13. What is the next number in the sequence; -11, -10, -8, -5, _____

14. A truck is carrying 100 cartons each containing 60tins. If each tin weighs 500g, what is the total weight of the tins in tonnes?

15. A wheel makes 7 revolutions when it rolls a distance of 11 metres. Find its diameter.

16. A square has a perimeter of 24cm. Find its area.

17. Find the value of y in the diagram if AD = DC.
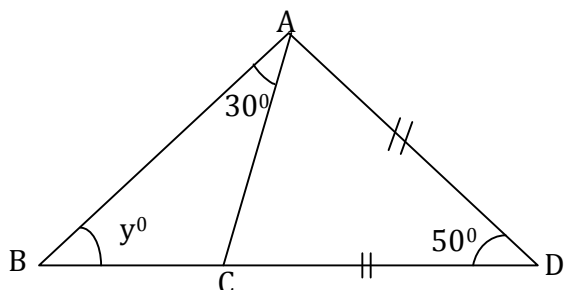
18. A rectangular room measures 200cm by 300cm. Find its area in square metres.

19. Express $\frac{3}{11}$ as a recurring decimal.

20. Solve for x in $3^{x+2} = 27$.

SECTION B

21. a) How many days are in February of a leap year?

    b) The sum of two numbers is 4201. One of them is 2909. What is the other number?

22. a) How many eighths are there in 4?

    b) If $\frac{x}{y} = 0.6666....$, find the value of $3x - 2y$.

23. a) Express $\frac{1}{3}$ as a ratio to $\frac{3}{5}$.

   b) Calculate the value of x.
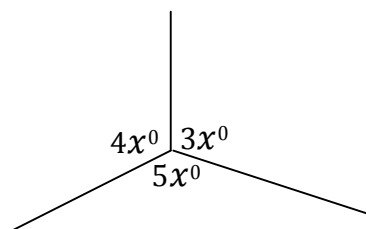
24. a) If $\frac{x}{2} = \frac{5}{y} = \frac{3}{4}$, find the value of $3y(4x - 3)$

    b) Find the value of angle marked x
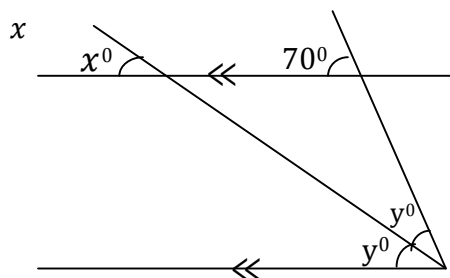
25. a) Decrease 80 by 25% and increase the result by 25%.

    b) The average age of 6 boys is 11 years. When 2 girls join them, the average becomes 12. Find the average of the two girls.

26. a) The length of the sides of two similar cubes are in the ratio 2 : 3. If the volume of the

larger cube is 27, find the volume of the smaller cube.

b) Find the value of angle marked P in the diagram.
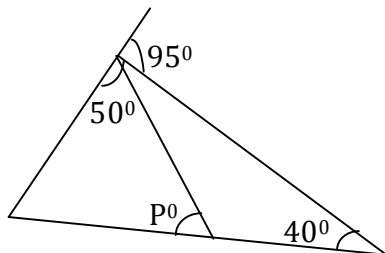

27. a) Kayima had 100 cows. He gave 25% of them to his son. How many cows did Kayima remain with?

b) Amooti deposited shs 18,000 for 3 months in a bank which offers interest rate of 20% per annum. Find the interest.

28. In a bag there are 15 red marbles and 11 blue ones. If a pupil picks a marble at random, what is the probability that it is not red?

28. a) After travelling one third of her journey to school one morning, Emily had 800 metres left. How far is the school from her home?
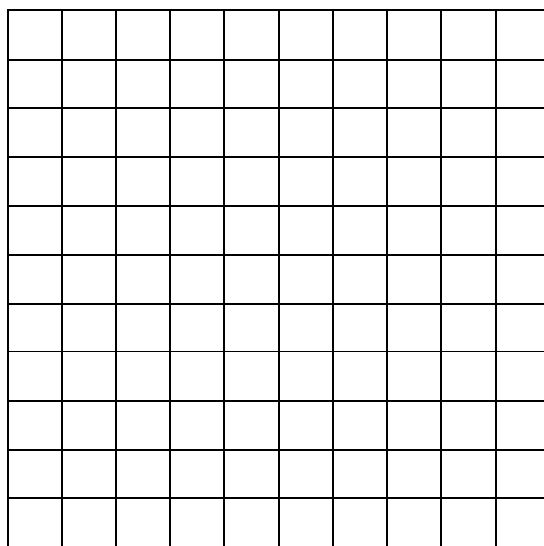
b) The area of the parallelogram PQRS is 40cm². T is the mid point of QR. Find the area of quadrilateral PQTS.

29.
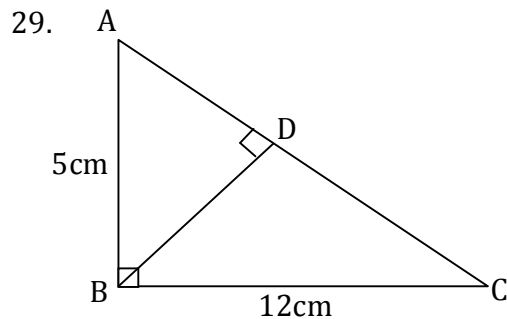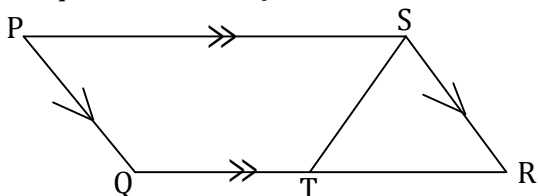
In the diagram find:

a) The area of triangle ABC.

b) The length of the hypotenuse AC

c) The height BD.

30. a) A is 8km South of B. C is East of B, and its bearing from A is 60^0 E. on a squared paper, using a scale of 1cm to 1km, draw a drawing showing the positions of A, B and C.

b) Use your diagram above to find the distance of C from A.

31. The distance between two towns A and B is 40km. A boy riding a bicycle at a speed of 8km/hr leaves town A at 7.am for town B. At 8.am, another

boy riding a motorcycle leaves town A at a steady non-stop speed of 12 km/hr heading for town B.

a) On the same axes show the journeys of the bicycle and the motorcycle (use the scale of 2cm to represent 4km and 2cm to 1 hour) Use your graph to estimate the;

b) Time when the motor cyclist overtakes the bicycle rider.

c) The distance from B when the motor cyclist overtakes the bicycle rider.

d) The time when the bicycle rider arrives in town B.

e) The time when the motor cyclist arrives in town B.

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