

WANYANGE GIRLS SECONDARY SCHOOL

S. 4 MATHEMATICS

SECTION A

1. Simplify $\frac{2^6 \times (3^3)^4}{2^2 \times 3^7}$, leaving your answer in index form.
2. Find the equation of a line which is perpendicular to the line $y = 3x - 4$ and passing through $(12, 5)$.
3. A teacher buys a computer costing shs. 330,000. If the rate of depreciation is 20% per annum. What will be its value at end of three years?
4. Given that $A(6, 4)$ and $B(16, 10)$ are two points in a plane, determine the;
a) vector **AB**.
b) modulus of **AB**
5. Without using tables or calculate evaluate:
 $2\log 5 + \log 15 - \log 125 - \log 3$
6. The function $f(x) = ax^2 + 8x$. If $f(-1) = 6$.
Find the value of a.
7. Out of 40 students, 14 take mathematics, 29 take chemistry and 2 take neither, mathematics nor chemistry. Find the number of students who take both subjects.
8. A variable M varies directly as the variables A and B. when $A = 63$ and $B = 4$, $M = 84$. Find the value of M when $A = 9$ and $B = 7$.
9. Find the value of p if the line $y + px = 0$ is parallel to the line $y = 6 - 8x$
10. If $A(5, 9)$ and $B(x, y)$ are two points and that $\mathbf{AB} = \begin{pmatrix} 3 \\ 4 \end{pmatrix}$. Find the coordinates of B.

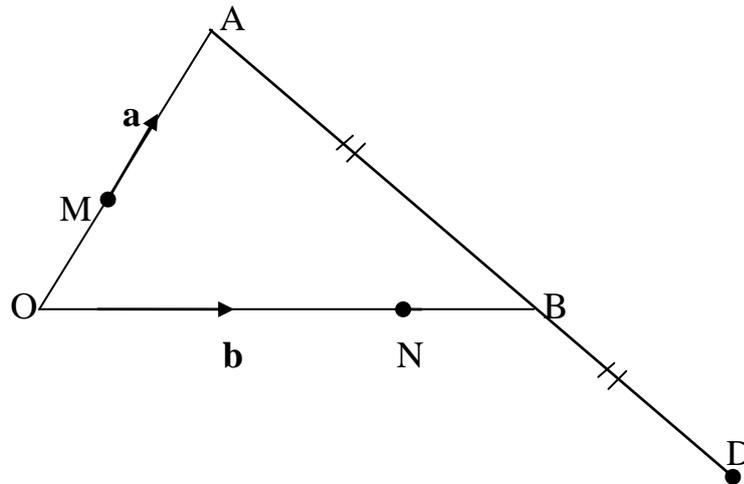
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SECTION B

11. (a) A map has a scale of 1:50,000. The area of a taxi park on the map is 9cm^2 .
What is the actual area of the park in km^2 ?
(b) A businessman invested shs. 6, 500, 000 at 15% compound interest per annum. Find his amount after a period of two years.
(c) A tourist to Uganda changed \$500 into Uganda shillings at a rate of \$ 1 = Ug. Shs. 3000. He spent shs. 700,000 and exchanged the remainder into pound sterling at a rate of £ 1 = Ug. Shs. 4000. How much did he get in pounds sterling.
12. (a) A mapping is defined by $g(x) = x^2 + 2x$.
Determine the range of the mapping whose domain is $\{-5, -2, 0, 3\}$
(b) Given that $f(x) = 2x - 5$ and $g(x) = x^2$. Find $fg(-4)$.

(c) If $h(x) = 3x + 8$, find the value of $h^{-1}(10)$.

13. In the diagram below $OA = \mathbf{a}$, $OB = \mathbf{b}$, M divides \overline{OA} in the ratio 3:4 and N divides \overline{OB} in the ratio 3:2. D is a point on \overline{AB} produced such that $\overline{AB} = \overline{BD}$.



a) Express in terms of \mathbf{a} and \mathbf{b} the vectors

(i) \mathbf{AB}

(ii) \mathbf{MN}

(iii) \mathbf{MB}

b) Show that M, N and D are collinear.

14. Two towns M and N are 200km apart. A bus left town M at noon and travelled at a speed of 50kmh^{-1} for one hour. It stopped for 30 minutes then continued to N at a speed of 60kmh^{-1} . An old taxi left town N at 12:30pm and travelled for one hour at a speed of 40kmh^{-1} . It then changed and travelled at a speed of 80kmh^{-1} .

a) Using scales of 2cm to represent 20km and 4cm to represent one hour, draw distance-time graphs showing the journeys for the two vehicles on the same axes.

b) Use the graphs to estimate the;

(i) distance from M to the point where the vehicles met.

(ii) time at which the two vehicles met.

(iii) time of arrival for the Bus at town N.

(iv) time of arrive for the taxi town M.

14. The table below shows the tax structure on taxable income of employees of a certain industry.

Income(shs) per month	Rate (%)
18,000 – 36,000	5.75
36,001 – 54,000	8.50
54,000 – 72,000	12.50
72,000 – 108,000	18.00
108,000 – 180,000	24.50
Above 180,000	40.50

An employee earning a gross income of shs. 425,000 a month is allowed the following:

ALLOWANCE	AMOUNT
Transport and lunch	45,000 per month
Housing	80,000 per month
Water and electricity	21,000 per month
Annual medical	900,000 per month
Marriage	$\frac{1}{20}$ th of gross annum income

The employee is allowed a family allowance for any three of his children according to age distribution.

Age	Shs
0 – 12	6,000
13 – 18	4,500
19 – 21	2,500

Given that this employee has a family of four children with the older aged 22, the other 21 year and the rest aged between 2 and 21 years.

Calculate the employee's

- (i) total monthly allowance.
- (ii) taxable income.
- (iii) net income.

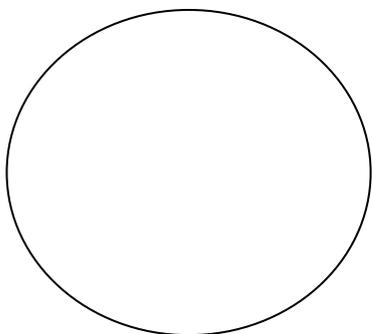
16. A group of 57 tourists visited a certain hotel and ate atleast one of the foods: Matooke (M), Rice (R) and Irish (I). 35 ate Rice, 20 ate Matooke and 25 ate Irish. The number of those who ate both Irish and Rice is equal to those who ate both Matooke and Rice. 10 ate both Irish and Matooke. 3 ate all the three types of food.
- a) Draw a Venn diagram to represent the above information.
 - b) Find the number of Tourists who ate both Rice and Irish.
 - c) How many did not eat both Matooke and Rice.

SECTION A (40 Marks)

1. Given that A(3, 4) and B(7, 7) are two points in a plane, determine the vector;
 - (a) \overrightarrow{AB}
 - (b) $|\overline{AB}|$
2. Factorise $x^2 - 2x - 15$. Hence solve $x^2 - 2x - 15 = 0$
3. Birungi invested shs 500,000 for 8 months at 15% interest. How much a mount does she get at the end of that time?
4. The radius of a circle is 17cm. What is the shortest distance from the centre to the chord of length 16cm?

5. Two sets x and y are such that $n(x) = 7$, $n(y) = 10$, $n(x \cap y) = 5$ and $n(x \cup y)^l = 3$. Find $n(\varepsilon)$ where (ε) is the universal set.
6. The function $g(x) = mx^2 - 5$. If $g(3) = 13$, find the value of m .
7. The interior angle of a regular polygon is 144° . Calculate the;
- (a) Number of sides of the polygon
 (b) The sum of interior angles in the polygon
8. The average marks of 8 students is 70%. What is the mark of the 8th student if the seven got 35, 80, 99, 53, 72, 42 and 97?
9. Find the equation of a line passing through (2, 5) and parallel to a line whose equation is $y = 5x + 4$.

10.



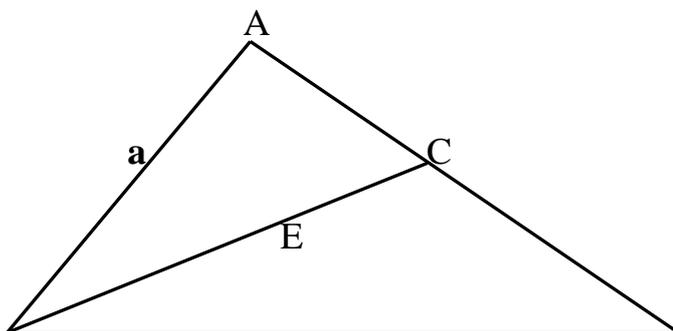
The diagram shows the circle whose center is O.
 Find the value of x^0 and y^0 .

SECTION B (60 Marks)

11. a) Copy and complete the following table for $y = x^2 + 3x - 10$

x	-6	-5	-4	-3	-2	-1	0	1	2	3
y	8			-10			-10			8

- b) Use your values in the table to draw the graph $y = x^2 + 3x - 10$
- c) Use your graph to solve $x^2 + 3x - 10 = 0$.
- d) On the same axes to draw the graph $y = x + 5$ hence solve $x^2 + 2x - 15 = 0$.
12. Given triangles OAB where $\overrightarrow{OA} = \mathbf{a}$, $\overrightarrow{OB} = \mathbf{b}$, $\overrightarrow{AC} = \frac{2}{3}\overrightarrow{AB}$ E is the mid-point of \overrightarrow{OC} . In terms of vectors **a** and **b**: Find vectors



- a) \overrightarrow{AB} (b) \overrightarrow{AC}
 c) \overrightarrow{OC} (d) \overrightarrow{OE}
 e) \overrightarrow{AE}

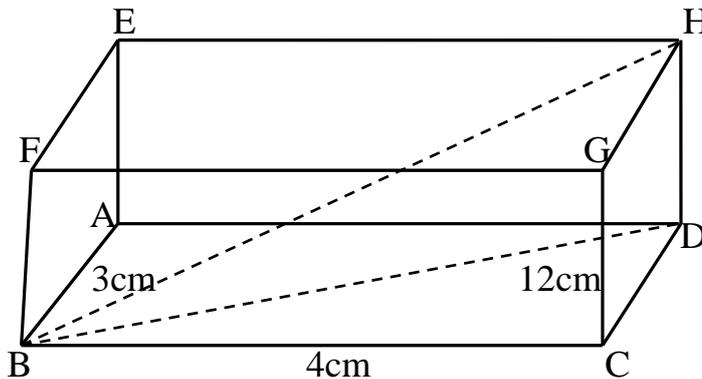
C

B

b

13. In a group of 45 students 23 study mathematics (M) 19 chemistry (C) 26 geography (G) 12 study (M) and (C) , 16 study M and (G), 13 study (C) and (G),
 $n(M \cup C \cup G) = 34$. By use of a Venn diagram, find the number of students who study
 a) All (b) none

14. The diagram below shows a cuboid $\overline{AB} = 3\text{cm}$, $\overline{BC} = 4\text{cm}$ and $\overline{CG} = 12\text{cm}$.



Calculate;

- (i) the length of \overline{BD} . (ii) the length of \overline{BH}
 (ii) the angle between the line BH and the plane ABCD.
 (iii) the angle between the planes HBC and ABCD
15. The table below shows the structure of workers in a factory

Income per month (shs.)	Tax rate %
0 – 200,000	10
200,001 – 350,000	20
350,001 – 500,000	25
500,001 – 700,000	30
700,001 and above	35

Nabirye's gross income is shs. 1,000,000 per month her allowances

House is shs. 25,000 per month

Marriage is shs. 30,000 per month

Medical is shs. 25,000 per month

Transport is shs. 25,000 per month

Family allowance per month is shs. 30,000 for each child between 10 and 18 years.

Shs. 40,000 for each child below 9 years.

Nabirye has 3 children , two below 9 years and other 16 years old.

- a) Her taxable income
- b) Income tax paid monthly.

16. a) Using matrix method solve the following equation,

$$2x + 5y = 8$$

$$3x + 4y - 5 = 0$$

b) Mutebe buys 3 books and 5 pens at shs. 11,500 and 2 books and 6 pens at shs. 9,000. What is the cost of one book and one pen.

SECTION A

1. A school has to take 384 people for a tour. There are two types of buses available, type X and type Y. Type X can carry 64 passengers, and type Y can carry 48 passengers. They have to use at least 7 buses.
 - (a) Form all the linear inequalities which will represent the given information. (5 marks)
 - (b) Draw the inequalities on a graph paper and shade the unwanted regions. (3 marks)
 - (c) Given that the charges for hiring the buses are type X: sh 25,000 and type Y: sh 20,000, use your graph to determine the number of buses of each type that should be hired to minimize the cost and state it. (2 marks)
2. A private developer has a scheme to develop some low cost houses. Type A houses need a floor area of 15m^2 per unit, and type B need a floor area of 24m^2 per unit. Land available does not exceed 1200m^2 . Profit per unit of type A is sh 48,000 and that of type B is sh 96,000. The cost per unit of type A houses is sh 240,000 and that of type B house is sh 540,000. The developer has shs 21,600,000.
 - (a) Form all the linear inequalities which will represent the above information. (marks)
 - (b) On the same axes, show the wanted regions of the inequalities forms in (a) above. (marks)
 - (c) Form the objective function. (marks)
 - (d) Find the maximum profit. (marks)
3. Mwanjoki flying company operates a flying service. It has two types of aeroplanes. The smaller one uses 180 litres of fuel per hour while the bigger one uses 300 litres per hour. the fuel available per week is 18,000 litres. The company is allowed 80 flying

hours per week. To keep for x hours per week while the smaller aeroplane must be flown for y hours per week.

- (a) Write down the inequalities representing the above information. (3 marks)
- (b) On the same grid, draw all the inequalities in (a) above by shading the unwanted regions. (3 marks)
- (c) The profit on the smaller aeroplane is sh 4,000 per hour while that on the bigger one is sh 6,000 per hour. Use your graph to determine the maximum profit that the company makes per week. (3 marks)

SECTION A (40 MARKS)

1. Given that $(y * x) = \text{HCF of } y \text{ and } x$, evaluate for $(9*15)*24$. (04 marks)
2. The area of a right angled triangle is 60cm^2 . The two shorter sides of the triangle are given as $(x-2)\text{cm}$ and $(x+5)\text{cm}$. find the lengths of the triangle. (05 marks)
3. Factorize $6x^2 - 7x - 3$ and hence solve $6x^2 - 7x - 3 = 0$. (04 marks)
4. A vertical wall is 9.8m high through what angle of elevation will a person whose height is 1.8m observe of the top of the wall from a horizontal distance of 20m. (04 marks)
5. Given the points P(5,-2) and Q(-1 -6) find the equation of the perpendicular bisector of PQ. (04 marks)
6. A chord of length 15 cm subtends an angle of 60° at the centre of the circle. Find the length of the minor arc described by the chord. (hint use π as 3.14) (04 marks)
7. Given that $B = \begin{pmatrix} 1 & -2 \\ 0 & 3 \end{pmatrix}$ find $|B^2|$. (04 marks)
8. Solve for x in the equation: $\frac{1}{2}(x + 1) - 1 = \frac{1}{4}(x - 2)$. (04 marks)
9. Given that $\log 5 = 0.699$ and $\log 3 = 0.4771$ find $\log 0.45$ (03 marks)
10. Show the solution set for the inequality: $2x^2 - x \leq 6$ in a number line. (04 marks)

SECTION B(60MARKS)

11. The table below shows the marks obtained by 50 S.4 students in mathematics mock examinations.

12	63	51	28	62	91	16	42	79	30
52	84	40	52	50	63	52	26	93	66
71	40	77	61	62	27	49	56	80	67

59	54	58	51	93	25	68	55	50	56
85	27	46	45	53	52	35	66	56	86

(a) Draw a frequency distribution table of equal class intervals of ten beginning with 10 as the lowest class limit. (04 marks)

(b) Calculate the mean mark using 54.5 as the working mean (02 marks)

(c) State the modal frequency. (01 mark)

(d) Draw an ogive and use it to estimate the median. (04 marks)

12. (a) Use the matrix method to solve the pair of simultaneous equations below;

$$x + 3y - 7 = 0 \text{ and } 2y - 16 = 5x \quad (04 \text{ marks})$$

b) Given that matrix $A = \begin{pmatrix} 3 & 4 \\ 2 & 5 \end{pmatrix}$ and $B = \begin{pmatrix} 3 & 2 \\ 4 & 5 \end{pmatrix}$,

Find: $\det(AB)$ and $(\det A \times \det B)$. Hence comment on your results.

(04 marks)

(c) Find the value of b for which

$$M = \begin{pmatrix} b+2 & 2 \\ 4b & 2b \end{pmatrix} \text{ is a singular matrix.} \quad (04 \text{ marks})$$

13. The triangle ABC with vertices A (1, 2), B (2, 6) and C (4, 2) undergoes an enlargement of linear scale factor -2 about the origin to form an image A'B'C'. The image A'B'C' is further transformed by a reflection in the line $x + y = 0$ to form the final image A''B''C''.

a) Find a matrix of transformation for the enlargement hence find the coordinates of the vertices of the first image.

b) Find the matrix for the reflection and the coordinates of the vertices of the final image.

c) Find a single matrix of transformation which maps the final image back on to the object.

d) Find how many times the area of the image will be compared to the object.

14. In a musical concert a local musician was to sing x classicals and y raps. Each classical takes 3 minutes and a rap takes 4 minutes. Allowing for applause and change over, the musician is expected to perform for a maximum of 36 minutes. His manager advises him to sing more classicals than raps. His fans demand that he sings more than 3 classicals and at least 2 raps.

a) Write down all the inequalities that satisfy the above conditions.

b) Represent the inequalities above on the same graph.

c) Hence find all the possible combinations of songs for the concert

15. a) Given that $y = 2x^2 - x - 15$, copy and complete the table below:

X	-3	-2	-1	0	1	2	3	4
---	----	----	----	---	---	---	---	---

$2x^2$			2					
$-x$								
-15	-15	-15	-15	-15	-15	-15	-15	-15
y								

(03 marks)

3

Turn over

b) By using a horizontal scale of 2cm: 1 unit and a vertical scale of 1cm: 1 unit draw the curve $y = 2x^2 - x - 15$ and the line $y = x$ on the same graph. (05 marks)

c) Hence find the roots of the equations:

i) $2x^2 - x - 15 = 0$

ii) $2x^2 - 2x - 15 = 0$

(04 marks)

16. a) Two planes start from an airport at same time. Plane A flies West at 400km per hour while plane B flies at 500km per hour on a bearing of 040° . What is the distance and of plane A from B after one and half hours. (06 marks)

b) Two boats A and B are in the same plane with a cliff. Boat A is 30m from the cliff and boat B is somewhere between the cliff and boat A. if the angles of elevation of the boats A and B from the top of the cliff are respectively 38° and 60° . Calculate the height of the cliff and how far boat B is from the foot of the cliff. (Assume the boats are on level ground with the foot of the cliff) (06 marks)

16. a) Given that $P = \begin{pmatrix} -2 & 4 \\ -1 & 3 \end{pmatrix}$ find the inverse matrix of P. (03 marks)

b) Four people; John, Peter, Ali and Mary went for shopping and bought the following items. John bought 2Kg of sugar, 5Kg of rice and 3 loaves of bread. Peter bought 1Kg of sugar, 3Kg of rice and 1 loaf of bread. Ali 2Kg of rice and 3 loaves of bread. Mary bought 3Kg of sugar, and 2 loaves of bread. The prices per item at the local nearby shop are: Shs. 5000 per Kg of sugar, Shs. 4000 per Kg of rice and a loaf of bread goes for Shs. 2500. At the super market in the nearby trading centre the items: sugar rice and a loaf of bread are: Shs. 4750, 3500 and 2200 respectively. The return journey to the trading centre is Shs. 1200.

i) Form a 4x3 matrix for the items bought by the three people (02 marks)

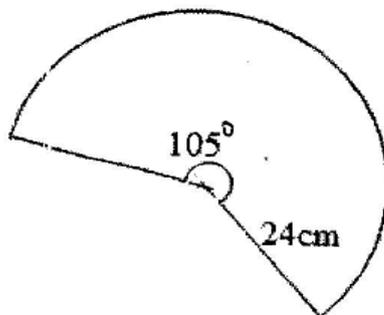
ii) Form a 3x2 matrix for prices at the local shop and nearby super market.

(02 marks)

- iii) By matrix multiplication find the cost of the items at both the local and super market for each of the three people. (03 marks)
- iv) Write down a column matrix for the savings of each person if they had bought the items from the super market. (02 marks)

SECTION A (40 marks)

1. Express 2.4454545..... as a fraction in its simplest form.
2. Find the equation of a line passing through the point (0, -3) and perpendicular to the line $x - 2y = 4$.
3. Set A and B are such that $n(A) = 12$, $n(B) = 10$, $n(A \cup B) = 18$ and $n(A^1 \cap B^1) = 5$. Find;
 - a) $n(\epsilon)$ where ϵ is the universal set
 - b) $n(A \cap B)$
4. A forest of actual area 72km^2 is represented by an area of 4.5cm^2 on a map. Find the representative fraction of the map.
5. Two similar cylinders have their lengths in the ratio 3:5.
 - a) Find the ratio of their volumes.
 - b) Given that the bigger cylinder has a volume of 750cm^3 , calculate the volume of the smallest cylinder.
6. Two lines $3x + 5y - 7 = 0$ and $4x - 3y - 19 = 0$ intersect at point A. Find the coordinates of A.
7. Completely factorise; $8x^2 - 12xy + 10xy - 15y^2$.
8. Without using a calculator, simplify $5(0.008)^{\frac{1}{3}} \cdot (27)^{\frac{-1}{3}} (25)^{\frac{1}{2}}$
9. Determine the coordinates of point **D** of a parallelogram ABCD with vertices **A**(1, 2), **B**(2, 5) and **C**(6, 3).
10. The figure below shows a net of a right circular cone. Calculate the diameter of the cone.



SECTION B

11. A school has a teaching staff of 22 teachers. 8 of them teach mathematics, 7 teach physics and 4 teach chemistry. Three teach both mathematics and physics and one teaches mathematics and chemistry. No teacher teaches all the three subjects. The number of teachers who teach physics and chemistry is equal to that of those who teach chemistry but not physics.

- (a) Represent the above information on a Venn diagram.
- (b) Find the number of teachers who teach:
- Mathematics only
 - Physics only.
- (c) Find the probability that a teacher chosen at random teaches only one or none of these subjects.

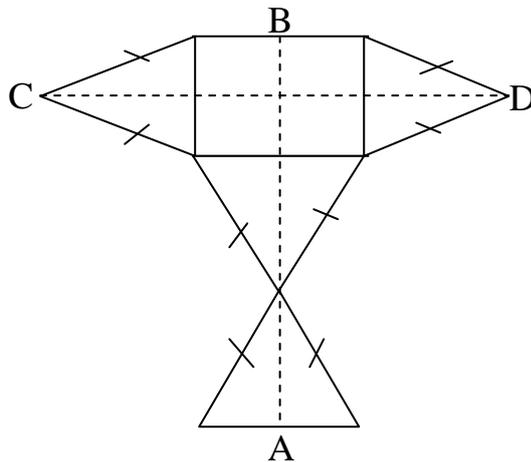
12. Given that $f(x) = \frac{2}{x} - 4$ find:

- (i) $f(-4)$ (ii) $f^{-1}(x)$ (iii) $f^{-1}(4)$

Given that $p(x) = x^2 + 1$ and $q(x) = x - 3$, find the value of x for which $pq(x) = qp(x)$

- (c) If $h(x) = 3x + 8$, find the value of $h^{-1}(10)$.

13. The diagram shows a square of side **12cm** and four congruent isosceles triangles representing the net of a pyramid on a square base.



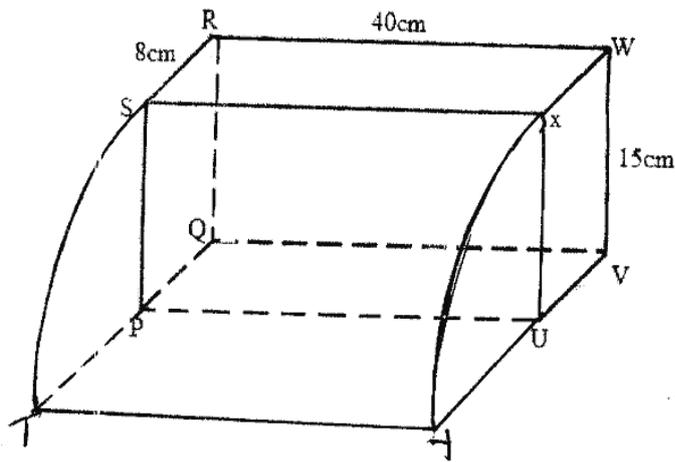
Given that **AB = CD = 40cm**, calculate the;

- height of the vertex of the pyramid from the square base,
- angle between the triangular face and the base of the pyramid,
- volume of the pyramid

14. OAPB is a parallelogram and Q is the midpoint of **AP**. **OP** meets **BQ** at X.

- If **OA = a** and **OB = b**, find \overrightarrow{BQ} and \overrightarrow{OP} in terms of a and b.
- If R is point on **BQ** produced such that $\overrightarrow{BQ} = \overrightarrow{QR}$. Show that the points O, A and R are co-linear.
- Given that $\overrightarrow{OX} = r\overrightarrow{OP}$ and $\overrightarrow{BX} = s\overrightarrow{BQ}$, find the scalars r and s. Hence find the ratios $\overrightarrow{OX} : \overrightarrow{OP}$ and $\overrightarrow{BX} : \overrightarrow{XQ}$

15. The diagram below shows a piece of wood of uniform cross – section PQRST in which PQRS is a rectangle and PST is a quadrant. Given that RW = 40cm RS = 8cm and VW = 15cm.

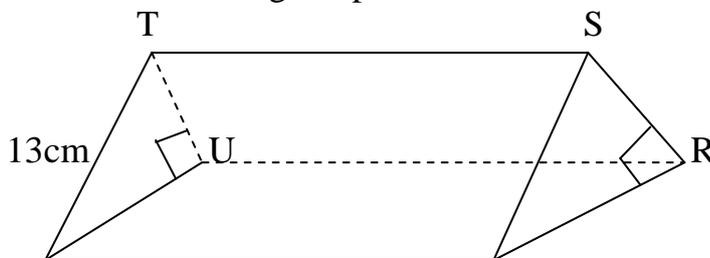


Calculate the:

- Area of the cross section PQRST.
- Volume of the wood.
- Total surface area of the piece of wood.

section A

- Simplify $\frac{2^6 \times (3^3)^4}{2^2 \times 3^7}$, leaving your answer in index form.
- Find the equation of a line which is perpendicular to the line $y = 3x - 4$ and passing through $(12, 5)$.
- A teacher buys a computer costing shs. 330,000. If the rate of depreciation is 20% per annum. What will be its value at end of three years?
- Given that $A(6, 4)$ and $B(16, 10)$ are two points in a plane, determine the;
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- Without using tables or calculate evaluate:
 $2\log 5 + \log 15 - \log 125 - \log 3$
- The function $f(x) = ax^2 + 8x$. If $f(-1) = 6$.
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- Out of 40 students, 14 take mathematics, 29 take chemistry and 2 take neither, mathematics nor chemistry. Find the number of students who take both subjects.
- A variable M varies directly as the variables A and B . when $A = 63$ and $B = 4$, $M = 84$. Find the value of M when $A = 9$ and $B = 7$.
- Find the value of p if the line $y + px = 0$ is parallel to the line $y = 6 - 8x$
- The figure below shows a triangular prism

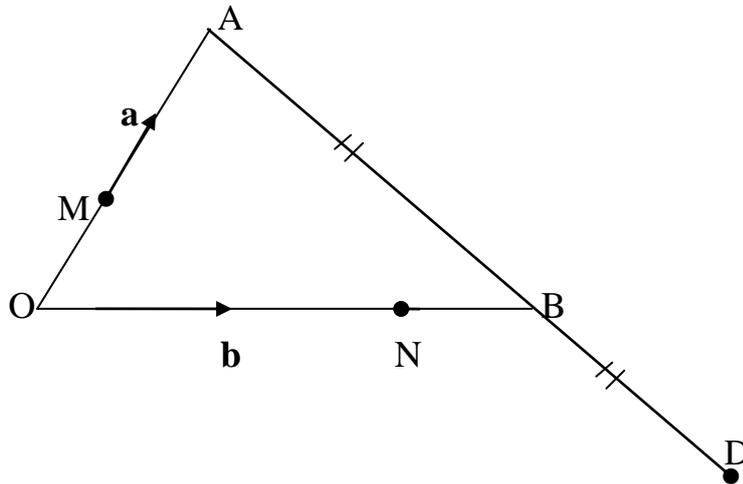




Find the area of $\triangle PUT$ and hence the volume of the prism.

SECTION B

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- (b) A businessman invested shs. 6, 500, 000 at 15% compound interest per annum. Find his amount after a period of two years. (3 marks)
- (c) A tourist to Uganda changed \$500 into Uganda shillings at a rate of \$ 1 = Ug. Shs. 3000. He spent shs. 700,000 and exchanged the remainder into pound sterling at a rate of £ 1 = Ug. Shs. 4000. How much did he get in pounds sterling.
12. (a) A mapping is defined by $g(x) = x^2 + 2x$. Determine the range of the mapping whose domain is $\{-5, -2, 0, 3\}$ (5 marks)
- (b) Given that $f(x) = 2x - 5$ and $g(x) = x^2$. Find $fg(-4)$. (3 marks)
- (c) If $h(x) = 3x + 8$, find the value of $h^{-1}(10)$.
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- a) Express in terms of \mathbf{a} and \mathbf{b} the vectors
- (i) \vec{AB}
- (ii) \vec{MN}
- (iii) \vec{MB}
- b) Show that M, N and D are collinear.

14. Two towns M and N are 200km apart. A bus left town M at noon and travelled at a speed of 50kmh^{-1} for one hour. It stopped for 30 minutes then continued to N at a speed of 60kmh^{-1} . An old taxi left town left town N at 12:30pm and travelled for one hour at a speed of 40kmh^{-1} . It then changed and travelled at a speed of 80kmh^{-1} .
- Using scales of 2cm to represent 20km and 4cm to represent one hour, draw distance-time graphs showing the journeys for the two vehicles on the same axes.
 - Use the graphs to estimate the;
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 - time of arrival for the Bus at town N.
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14. The table below shows the tax structure on taxable income of employees of a certain industry.

Income(shs) per month	Rate (%)
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An example earning a gross income of shs. 425,000 a month is allowed the following:

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Transport and lunch	45,000 per month
Housing	80,000 per month
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Annual medical	900,000 per month
Marriage	$\frac{1}{20}$ th of gross annum income

The employee is allowed a family allowance for any three of his children according to age distribution.

3

Age	Shs
0 – 12	6,000
13 – 18	4,500
19 – 21	2,500

Given that this employee has a family of four children with the older aged 22, the other 21 year and the rest aged between 2 and 21 years.

Calculate the employee's

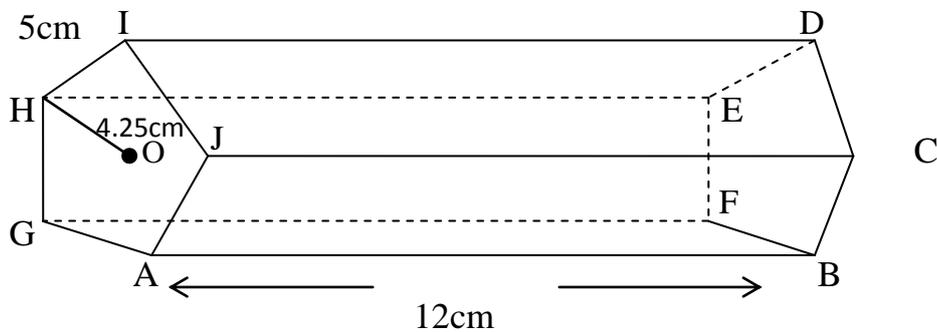
- total monthly allowance.

- (ii) taxable income.
- (iii) net income.

16. A group of 57 tourists visited a certain hotel and ate at least one of the foods: Matooke (M), Rice (R) and Irish (I). 35 ate Rice, 20 ate Matooke and 25 ate Irish. The number of those who ate both Irish and Rice is equal to those who ate both Matooke and Rice. 10 ate both Irish and Matooke. 3 ate all the three types of food.

- a) Draw a Venn diagram to represent the above information.
- b) Find the number of Tourists who ate both Rice and Irish.
- c) How many did not eat both Matooke and Rice.

17. The diagram represents a regular pentagonal prism of 12cm. the cross-section is a regular pentagon, centre O, whose dimensions are shown on the figure.



- (i) Draw a net of the prism.
- (ii) Calculate;
 - a) the total surface area of the prism
 - b) the volume of the prism.

END
B.T.M