UNIVERSITY OF NAMIBIA

SUBJECT	MATURE AGE ENTRY TEST
SUBJECT AREA	NUMERACY(SCIENCE RELATED)
DATE	SEPTEMBER 2017
DURATION	2 HOURS MARKS :100

This question paper consists of 9 pages including the cover page

Student number.....

Surname:.....

First Name:.....

Centre:.....

Instructions

- Show your calculations.
- Calculators are allowed
- Round answers to one Decimal Place where Needed

1. A sweater is being sold with a reduction of 20% for only 39.95 Namibian dollars. What was the original price of the sweater? [3 marks]

2. In a big livestock farm are 180 Goats and 250 Sheep. A vet comes and identifies 5% of the Goats and 12% of the Sheep as sick. What percentage of livestock in the farm were sick? [5 marks]

3. Simplify the following

   a. $\frac{9u^2-6u+1}{u+8} \div \frac{3u-1}{2u^2+15u-8}$ [6 marks]

   b. $\frac{4u^2+3u+1}{u+8} \cdot (2u-3)$ [4 marks]

4. Factorize the expression below completely [4 marks]
   25f4 – 20f3 + 5f2 - 4f

5. There are 24 slices in a loaf of bread. If Joseph ate 2 thirds of the bread and his brother 3 fourths of the rest, how many slices are left? [4 marks]

6. If the speed of light is 300 000 km/sec and it takes light from the sun 8 min to reach the earth how far is the sun from the earth (in km)? [3 marks]

7. A school hall measures $25.2m\ by\ 11.5m$. There are 6 windows (175 cm by 140 cm) and 1 door (2 m by 125 cm). Determine: [15 marks]
   a. The cost of painting the ceiling at $N\$\ 12.50\ per\ m^2$

b. The cost of painting the walls (excluding windows and doors) at $N\$\ 15.50\ per\ m^2$

c. The number of boxes of tiles (measuring 30 cm by 30 cm and sold in boxes of 25, at N$ 110.00 per box) needed to tile the floor.

d. The total cost of tilling the floor including labour cost of $N\$\ 30\ per\ m^2$

e. The cost of installing air conditioning at $N\$\ 20\ per\ m^3$

8. Solve for **r:** $\frac{r+6}{7} < -2$ [2 marks]

9. Solve the following simultaneous equation [4 marks]

$6x - 4y = 18$

$-5x + 7y = -4$

10. Use the following function rule to find *F(q-7)*. Simplify your answer. [3 marks]

$\mathbf{F(x) = -9m - 12}$

11. Solve for the given variable in **bold.** [10 marks]

a. $-2q^2 + 100 = 0, \boldsymbol{q}$

b. $49v^2 - 3 = 125^2, \boldsymbol{v}$

c. $\frac{25}{x^2} + 7 = 9, \boldsymbol{v}$

d. $7m^2 - 3m = 7 = 0, \boldsymbol{m}$

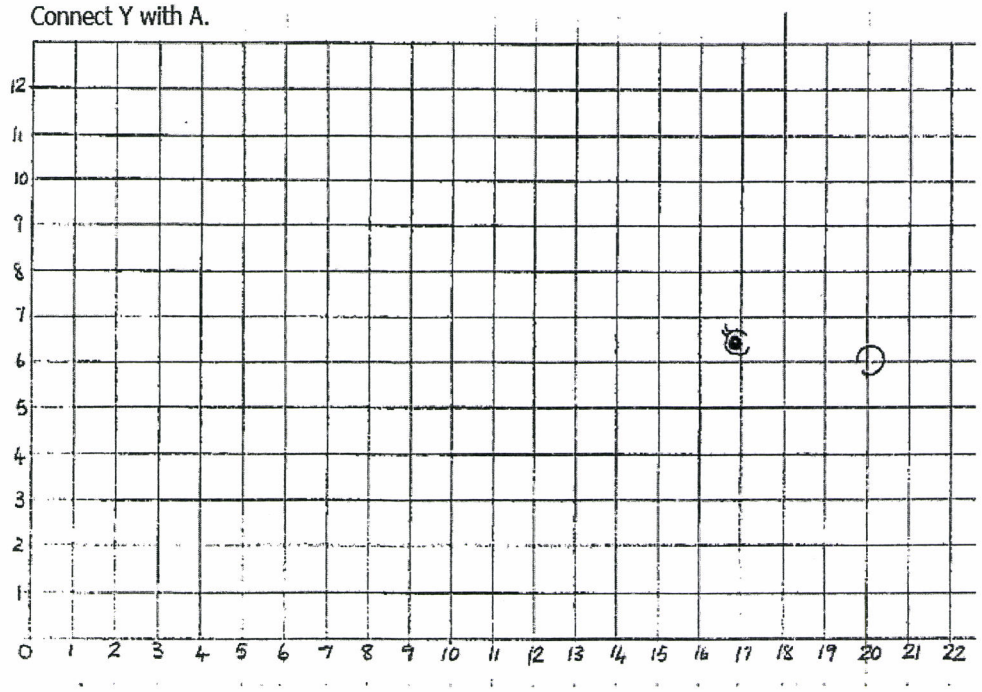
e. $\frac{a-7}{2} = \frac{a+3}{8}$, **a**

12. Consider the graph below , Plot the given points and join them in **alphabetic order** [15 marks]

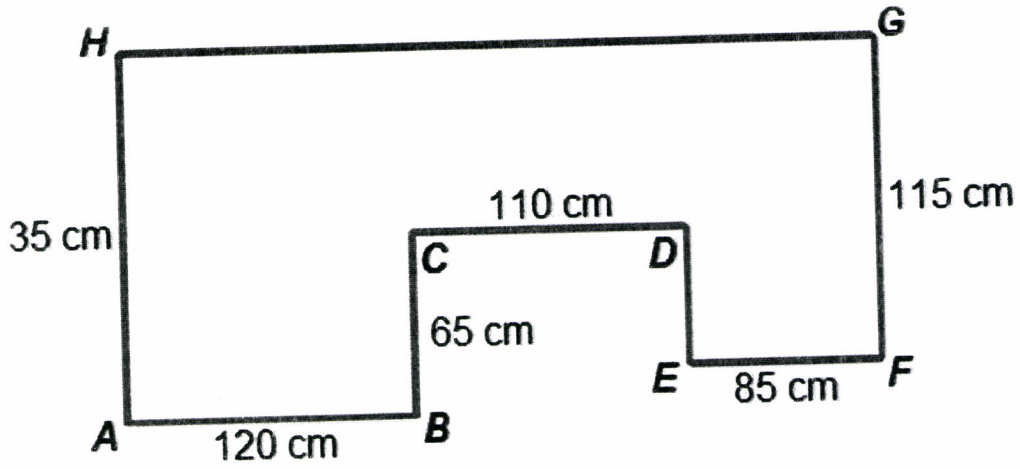
Plot the following points on the graph below and join them in alphabetical order:

A(1;2) B(1;3) C(2;5) D(1;7) E(1;8) F(4;5) G(6;7) H(6;9) I(8;8) J(10;9) K(8;12) L(11;11) M(13;9) N(16;8) O(20;6) P(18;5) Q(15;5) R(16;4) S(15;3) T(11;1) U(13;3) V(10;3) W(6;2) X(7;3) Y(4;4)

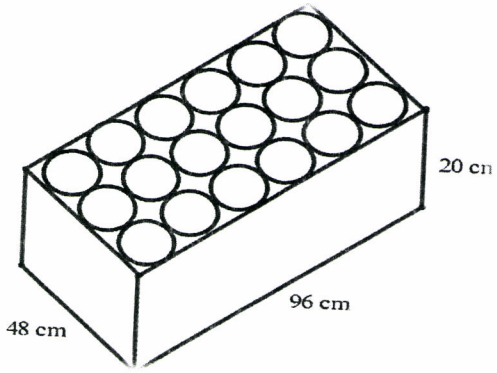
Connect Y with A.



13. Consinder the compound figure below, find the area of the figure. [10 marks]



14. The figure below shows an open cardboard box having length, 96 cm, width, 48 cm and height, 20 cm. the box contains 18 cans of jam. The of the jam can is 20 cm.



a. Calculate the surface area of the box. [6 marks]

.....cm^2

b. What is the radius of each can? [3 marks]

.....cm

c. What volume of the box do the cans occupy? [4 marks]

.....cm^3

d. Hence, determine the unused volume of the box [4 marks]

.....cm^3