REVISION TEST ONE **MATHEMATICS** **S.1**

TIME: 1½ HOURS **APRIL 2012**

Attempt all the questions:

1. If $443_n + 561_n = 1224_n$. Find n.

2. Find the smallest amount of money which can be divided equally among 6 boys or 15 boys or 18 boys.

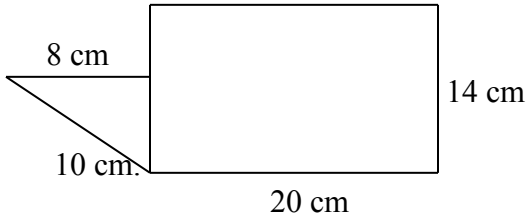
3. Calculate $\frac{1}{3} + \frac{7}{4} - \frac{5}{5} of \frac{1}{2} \div \frac{3}{8}$

4. Given that $a = 3/8$, $b = 1/5$. Find $\frac{a+b}{a \times b}$

5. A triangle has angles 65^0 , $(2x+30)^0$, $(3x)^0$. Find the value of the smallest angle.

6. Express $180 km/hr$ in m/s .

7. Study the figure and answer the questions that follow:



Using $\Pi = \frac{22}{7}$, find the total area and perimeter of the figure.

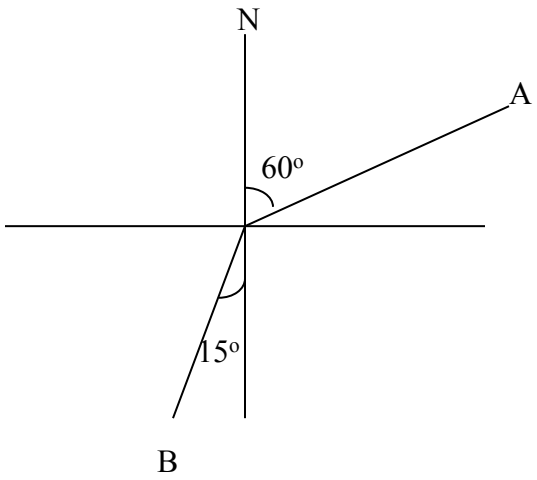
8. a) ABCDE is a regular polygon with point O at the center. Calculate the size of the angle OAB

b) The interior angle of regular polygon is 160^0. How many sides has the polygon.

9. a) Think of a number x, multiply it by 2 and add – 18 to it, my result is 10, find x.

b) Simplify $x + 2a + \frac{3x}{4} - \frac{2a}{5}$

10. In the figure shown below, state the bearing of the points A and B in two different ways.



SECTION B:

11. A ship sails $95km$ on a bearing of 140^0 then a further $102km$ on a bearing of 260^0 and then returns directly to its starting point.

Find: a) the length of the return journey.

b) the bearing of return journey.

12. a) Using a pair of compasses and ruler only, construct a triangle XYZ, where $XY = 8.5cm$, angle $XYZ = 105^0$ and $XZ = 12cm$.

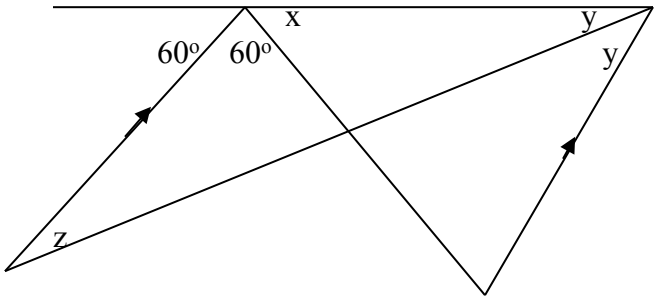
b) Measure angle X and Z and side XZ.

13. Joy distributed books to 60 students. She gave squared books to 34 students and lined books to 40 students. Fourteen of the students got both types. How many students received:-

a) squared books but not lined.

b) lined books only?

14. a)



Calculate the size of x, y and z, giving reasons.

b) Write down the next two numbers in the following sequences:-

i) 1, 3, 6, 10, - - - -. - - - - -

ii) 1, 4, 20, 120, - - - -, - - - -

15. a) Plot the points A(2, 2), B(2, 11), C(6, 10) and D(6, 6)

b) What shape do you get?

c) Find the area of the shape/figure.

Solutions

SENIOR ONE MATHEMATICS – REVISION TEST ONE-SOLUTIONS.

1. 443_n

561_n

1224_n

Using 4 + 6 = 2 (mod n)

n + 2 = 10

n = 10 -2

n = 8.

2. L.C.M of 6,15,18

2	**6**	**15**	**18**

3	3	15	9
3	1	5	3
5	1	5	1
	1	1	1

L.C.M = $2x3^2x5$

= $\underline{90}$

3. $\frac{1}{3} + 1\frac{3}{4} - \frac{5}{5}$ of $\frac{1}{2} \div \frac{3}{8}$

$= \frac{1}{3} + \frac{7}{4} - \left(1x\frac{1}{2}\right)x\frac{8}{3}$

$= \frac{1}{3} + \frac{7}{4} - \left(\frac{1}{2}x\frac{8}{3}\right)$

$= \frac{1}{3} + \frac{7}{4} - \frac{4}{3}$

$= \frac{4+21-16}{12}$

$= \frac{9}{12}$

$= \underline{\frac{3}{4.}}$

4. a= $\frac{3}{8}$ b = $\frac{1}{5}$

$$\frac{a+b}{axb} = \frac{\frac{3}{8}+\frac{1}{5}}{\frac{3}{8}x\frac{1}{5}}$$

$$= \frac{\frac{15+8}{40}}{\frac{3}{40}}$$

$$= \frac{23}{3}$$

$$= 7\frac{2}{3}$$

5. $65^0 + (2x+30)^0 + 3x^0 = 180^0$

$95^0 + 5x^0 = 180^0$

$5x^0 = 180^0 - 95^0$

$\frac{5x^0}{5} = \frac{85^0}{5}$

$x = 17^0.$

Smallest angle = $3x^0$

$= 3x17^0$

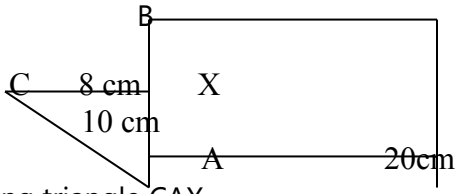
$= \underline{51^0}.$

6. 180 Km/hr to m/s.

180Km/hr $= \frac{180x1000}{3600}$

$= \underline{50m/s.}$

7.



Using triangle CAX

$Ax^2 + 8^2 = 10^2$

$Ax^2 = 100 - 64$

$Ax^2 = 36$

$Ax = \sqrt{36}$

$Ax = 6cm$

$\therefore$ Bx = 14 – 6

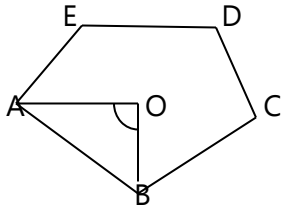
= 8 cm.

Perimeter = (20 x 2) + 14 + (8 x 2) + 10 = <u>80cm</u>.

Area = (20 x 14) + $\frac{1}{2}x6x8$

= 280 + 24

= $\underline{304cm^2}$

8. 

$\angle$ A O B = $\frac{360^0}{5}$

= $\underline{72^0}$.

(a) $\angle$ OAB = $\frac{180^0 - 72^0}{2}$

= $\frac{108^0}{2}$

= $\underline{54^0}$

(b) Exterior angle

= $180^0 - 160^0$

= 20^0.

Number of sides

= $\frac{360^0}{20^0}$

= $\underline{18}$ <u>sides.</u>

9. (a) $(Xx2) - 18 = 10$

2x – 18 = 10

2x = 28

X = 14.

(b)Simplify:

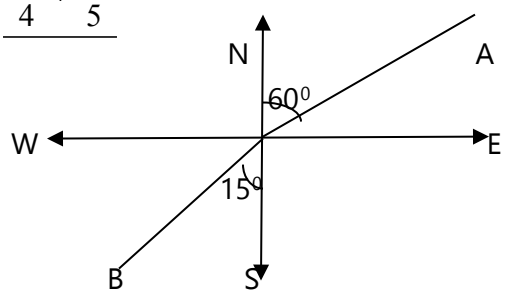
$$x + 2a + \frac{3x}{4} - \frac{2a}{5}$$

$$= \frac{20x + 40a + 15x - 8a}{20}$$

$$= \frac{35x + 32a}{20}$$

$$= \frac{7x}{4} + \frac{8a}{5}$$

10.



(i) Bearing of A; 060^0

$N60^0E$

(ii) Bearing of B; 195^0

$S15^0W$.

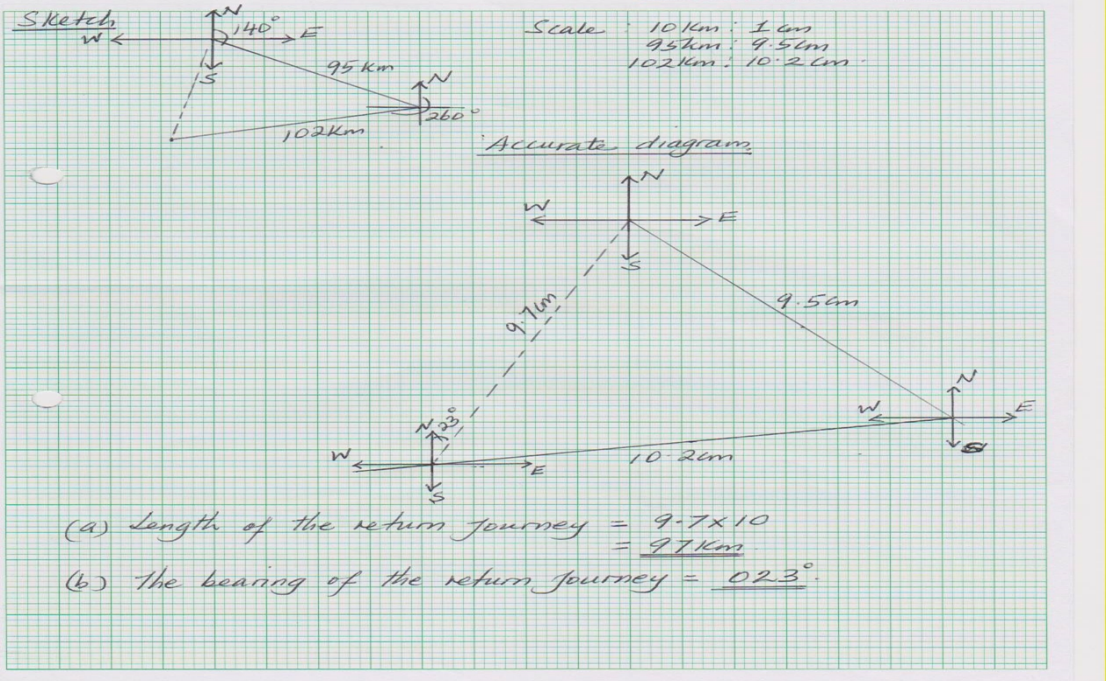
SECTION B

11.

UGANDA NATIONAL EXAMINATIONS BOARD

(To be fastened together with other answers to paper)

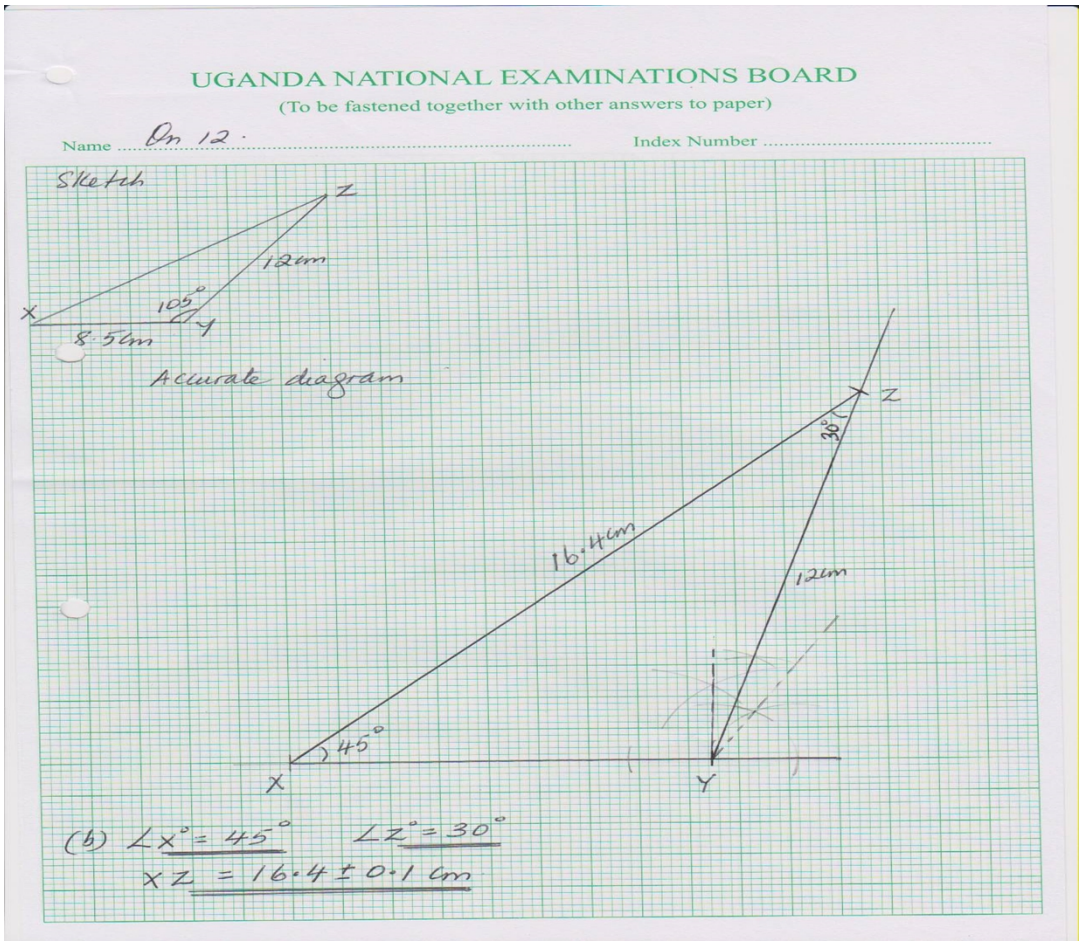
Name ... Qn 11 ... Index Number .....



(a) Length of the return journey = 9.7×10
$= 97\text{Km}$

(b) The bearing of the return journey = $023°$.

12.



13. $n(E)$ = 60

$n(S)$ = 34

$n(l)$ = 40

$n(Snl)$= 14

Use a Venn diagram to answer this question.

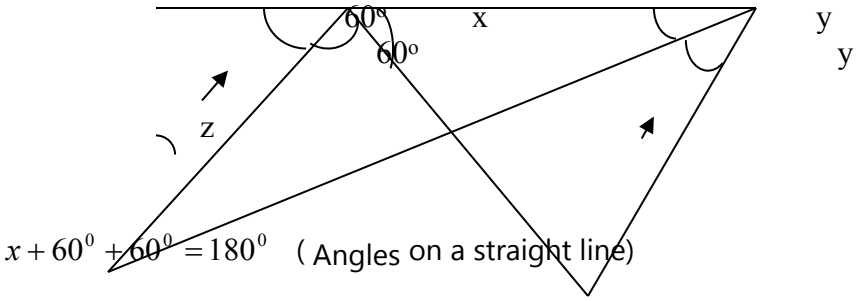
$n(Snl^1)$ = 34 -14

= <u>20 students.</u>

$n(lonly)$ = 40 -14

= <u>26 students.</u>

14.



$x + 60^0 + 60^0 = 180^0$ (Angles on a straight line)

$x + 120^0 = 180^0$

$x = 180^0 - 120^0$

$\underline{x = 60^0.}$

$y^0 + y^0 = 60^0$ (Co-interior angles)

$\frac{2y^0}{2} = \frac{60^0}{2}.$

$\underline{y = 30^{0.}}$

$y + x + 60^0 + z = 180^0$

(Angle sum of a triangle).

$30 + 60^0 + 60^0 + z = 180^0$

$150^0 + z = 180^0$

$z = 180^0 - 150^0$

$\underline{z = 30^0.}$

(b). write down the next two numbers in the following sequences;

(i) 1, 3. 6, 10, <u>15</u>, <u>21</u>.

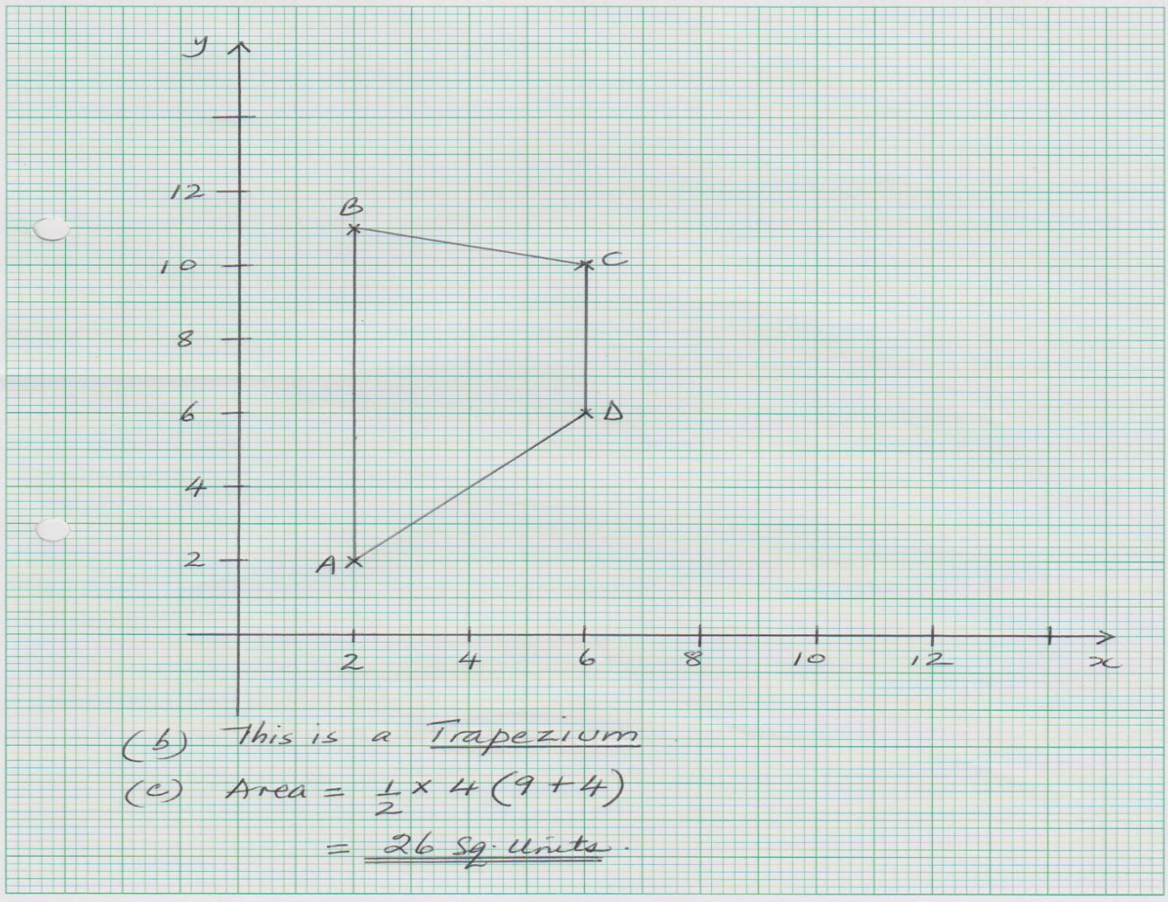
(ii) 1, 4, 20, 150, <u>840</u>, <u>6720</u>.

15.

UGANDA NATIONAL EXAMINATIONS BOARD

(To be fastened together with other answers to paper)

Name ..... Index Number .....



(b) This is a Trapezium

(c) Area = $\frac{1}{2} \times 4(9+4)$

$= 26$ Sq. Units.