PROVINCIAL DEPARTMENT OF EDUCATION
NORTHERN PROVINCE
Year End Examination– 2018
Mathematics

Grade : 9 | 32 TI | **Time :- $2\frac{1}{2}$ Hours**

Index No :.....
Supervisor Signature :…….

Instructions

- Write your index number correctly.
- Use the under space to get answer method.
- Answer the all questions must be done part I
- Answer the first question and other four questions must be done part II
- Not allowed to get out the answer sheet from the exam hall after the examination.

Important:

- Part I has 20 questions each has 2 marks totally 40 marks given.
- Part II for the first question 16 Marks and other questions each has 11 marks totally 60 marks

Marking examiner:
……

Cross examiner :
……

Examiner use only :

Part	Question	Marks
I	1-20	
II	1	
	2	
	3	
	4	
	5	
	6	
Total		

Part - I

Answer all questions

01) Round off 1880 to the nearest 100.

02) Consider the experiment of drawing a card at random from a bag containing identical cards marked with the digits $1,\ 2,\ 3,\ 4$ and 9 and recording the digit on it where $S = \{1,\ 2,\ 4,\ 6,\ 9\}$. Find the probability of drawing card with a square number marked.

03) The order in which the keys need to be find the value of on a scientific calculator.

$\boxed{ON} \rightarrow \boxed{2} \rightarrow \boxed{4} \rightarrow \boxed{+} \rightarrow \boxed{9} \rightarrow \boxed{\div} \rightarrow \boxed{3} \rightarrow \boxed{=}$

04) Simplify : $1101_2 + 101_2 + 11_2$

05) Factorize : $4x^2 - 25$

06) Make 'd' as the subject from $\ell = a + (n-1)d$.

07) A person who sells a particular land of worth Rs 3 000 000 for Rs 3500 000. If a broker charged Rs 175 000 is given by land owner. What is the commission percentage that he charged?

08) Simplify : $\frac{(2p^3)^2}{4\,p^4 g^2}$

09) Write the set of positive integral solutions of the inequality $5x \leq 10$.

10) Simplify : $\frac{5x+4}{6} - \frac{1-x}{6}$

11) Find the value of $(x - y)$ without solving the equations $3x - 4y = 12$ and $2x - y = 8$.

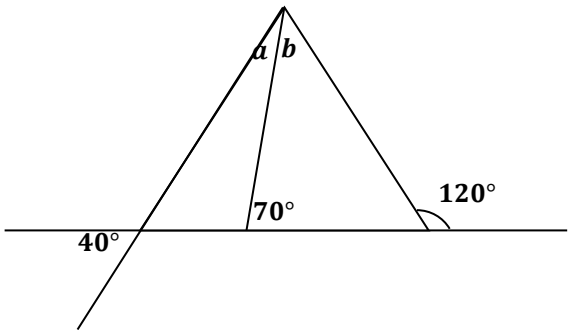
12) The ages of 10 players of a certain sports club are given below.

15, 16, 16, 17, 18, 19, 20, 20, 21, 23

If a player joined with them, the new median is 18 and this distribution is a single mode distribution, find his age?

13) Remove the bracket and Simplify : $2x - y - 3(x - 3y)$

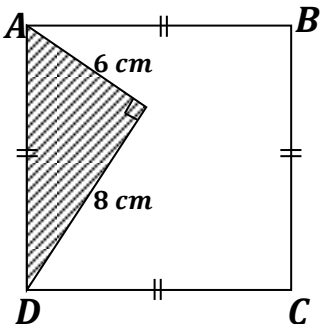
14)



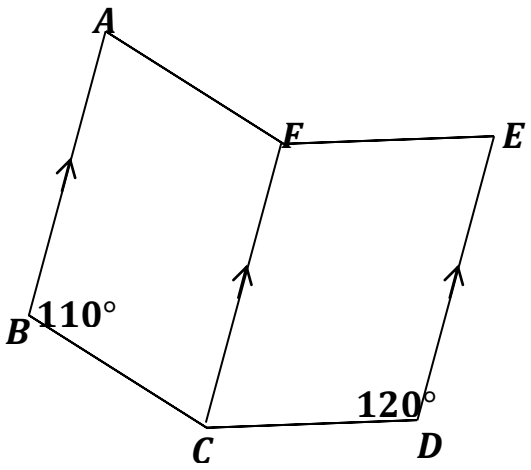
In the given figure find the value of a and b. $a =$ .....

$b =$ .....

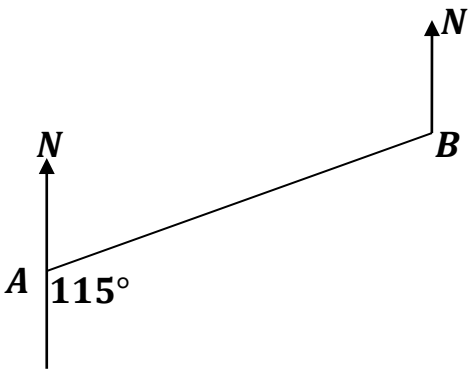
15) A smooth cylindrical shaped vessel contains $1.25\ \ell$ water in it to a height $10\ cm$. Find the area of cross section of this vessel.

16) 

According to the given data, find the perimeter of square $ABCD$.

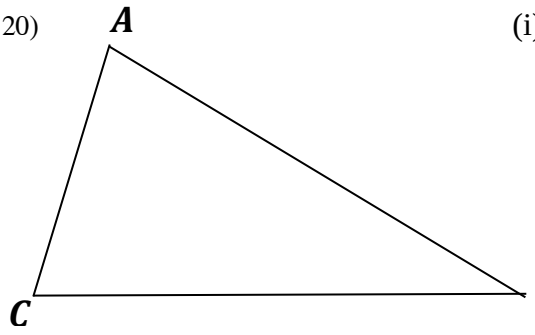
17) 

In the given figure $BA//CF//DE$. Find the magnitude of $B\hat{C}D$.

18) 

According to the given figure, find the bearing of A from B.

19) Find an interior angle of a decagon?

20) 

(i) Construct the locus of a point equidistance from A and B.

(ii) Construct the locus of a point equidistance from the lines AC and BC.Mark the point of intersection of the above two loci as 'P'.

Part - II

01) (a) A pattern created by using matchsticks in shown below.

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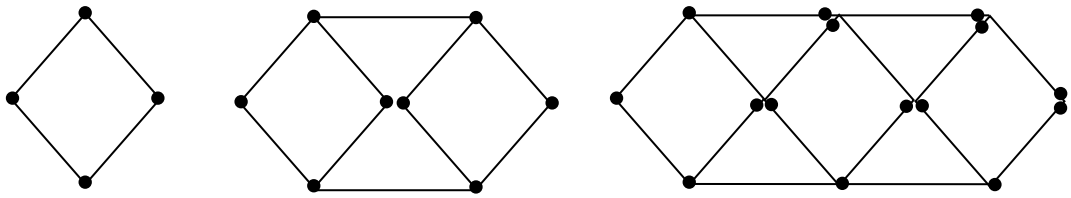


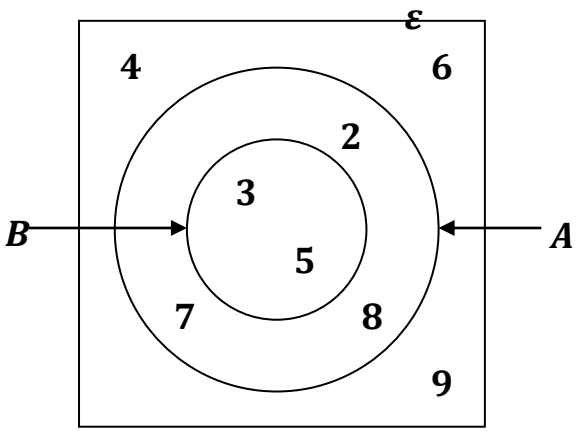
(i) Complete the table.

Figure number	1st	2nd	3rd	4th
Total number of matchsticks	.....	10	.....	.....

(ii) Find the general term in terms of n.

(iii) A student said the 18^{th} term of this number pattern is 110. Do you agree? give reason.

(b)



According to the Venn diagram,

(i) List the elements of set A.

(ii) Shade region B'.

(iii) Find the number of elements of set $A \cap B$.

(iv) Write all subsets of set B.

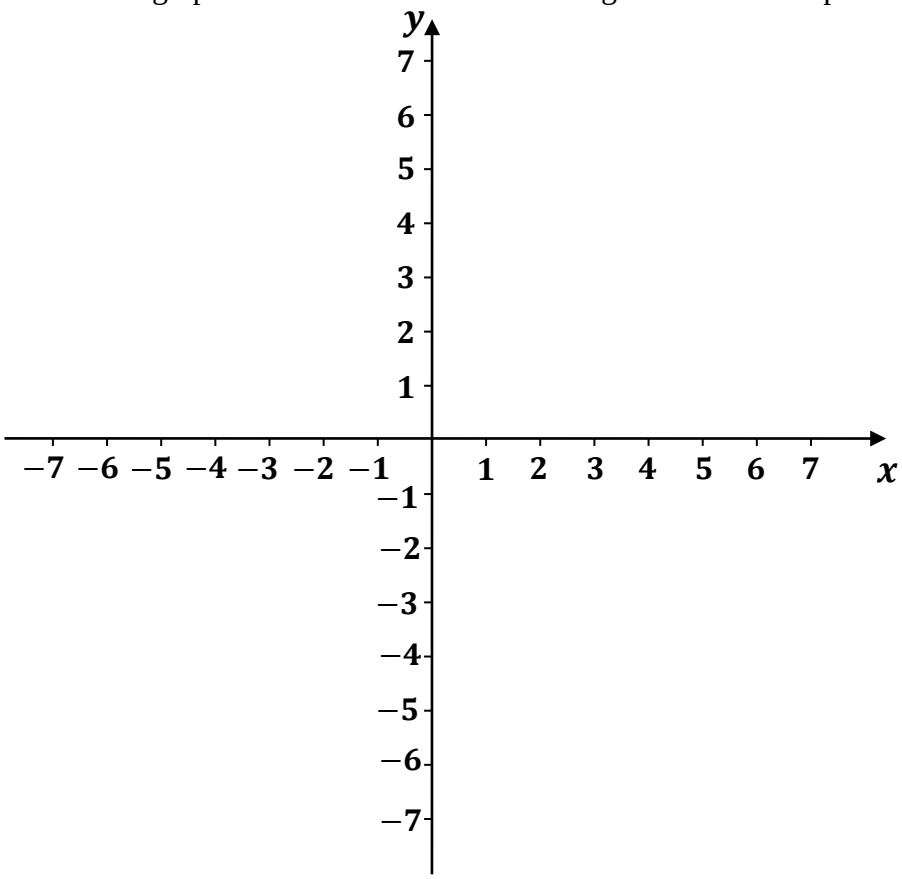
(3 + 2 + 3 + 2 + 2 + 2 + 2 = 16 Marks)

02) Complete the table of values prepared to draw the graph of the function $y = 3x - 2$.

(i)

x	-1	0	1	2
y	-5	-2	.....	4

(ii) Draw the graph of the above function on the given coordinate plane.



(iii) Using the graph, write coordinates of the graph intersects the y - axis?

(iv) Write the coordinates of the point at which $y = 4$ intersects the above graph?

(v) Write the equation of a straight line which is passes through $(0, 4)$ and parallel to $y = 3x - 2$.

($2 + 3 + 1 + 2 + 3 = 11$ Marks)

03) (i) Draw a straight line $AB = 9\ cm$ using ruler and pair of compass.

(ii) Construct an angle of $60°$ at A such that AB is an arm.

(iii) Construct an angle of $75°$ at B such that BA is an arm.

(iv) Complete the triangle ABC.

(v) Construct the locus of the point equidistance from two points A and C.

(vi) Construct the locus of the point equidistance from two points A and B.

(vii) Mark the point of intersection of (v) and (vi) as 'O'.

(viii) Measure and write the length of AO, BO and CO.

(ix) What can you say about AO, BO and CO.

$(1 + 1 + 2 + 1 + 2 + 1 + 1 + 1 + 1 = 11$ Marks)

04) (a) The data collected by a milk board meter reader on the milk consumption of each of the households in a certain housing scheme during a month is given below.

Collecting milk (ℓ) in one day	No. of. days (f)	$f \times x$
25	1	
35	2	
45	4	
55	6	
65	8	
75	5	
85	2	
95	2	
sum of data	30	

(i) Complete the table?

(ii) Find the mean?

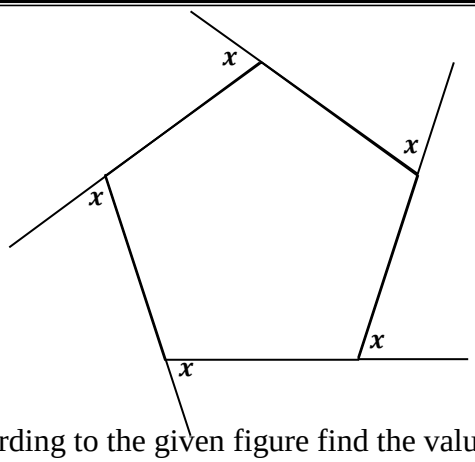
(b) A vendor marks the price of a refrigerator such that he earns a profit 25%. He intends to offer a discount of 15% on the marked price when the item is sold. If the refrigerator is sold for Rs 127500,

(i) Find the marked price.

(ii) Find the purchase price.

$(3 + 3 + 3 + 2 = 11$ Marks$)$

05) (a)

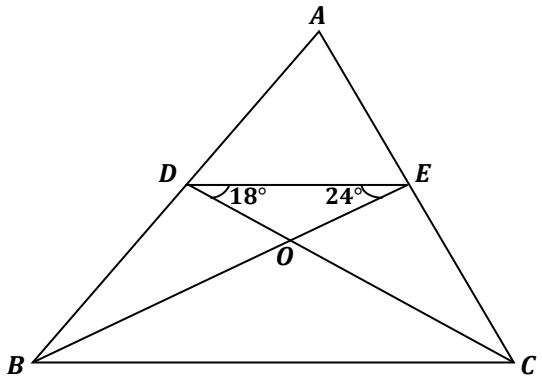


(i) According to the given figure find the value of x.

(ii) If an interior angle of a regular polygon is equal to five times of its exterior angle, find the value of an exterior angle.

(iii) Find the number of sides of it?

(b)



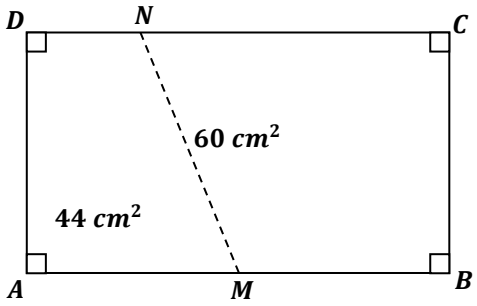
In the $\Delta\, ABC$ bisectors of $\hat{B}$ and $\hat{C}$ are BE and Cd respectively and meet at O. Find the magnitudes of the following with reasons.

(i) $B\hat{O}D =$

(ii) $B\hat{A}C =$

$(2 + 2 + 2 + 2 + 3 = 11$ Marks$)$

06)



The given rectangle $ABCD$ is divided in to 2 parts. Area of trapezium $AMND$ is 44 cm^2 and the area of trapezium $MBCN$ is 60 cm^2 If $AM = 7\ cm,\ MB = 6\ cm$,

(i) Find the breadth of rectangle.

(ii) Find the length of CN.

(iii) If a circular lamina is cut out from this rectangle of which the maximum area, find the area of circle.

(iv) This rectangle is cutout through MN into 2 parts. Make a parallelogram by joining these two parts carefully and draw it mark the measurements of it.

(2 + 3 + 3 + 3 = 11 Marks)