



PROVINCIAL DEPARTMENT OF EDUCATION - NORTH WESTERN PROVINCE

First Term Test 2018

Grade 09

Mathematics

Time : 2½ hours

Name / Index No.

Part I

- Answer all questions on this paper itself.

01. 14, 17, 20, Write the next two terms of the number pattern.

02. $1011_{\text{two}} + 101_{\text{two}}$ simplify,

03. Simplify,

$$\frac{9}{28} + \frac{3}{14}$$

04.

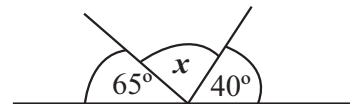
Stem	Leaf
1	1, 7, 9
2	0, 3, 3, 6
3	4, 8

In the given stem leaf diagram.

(i) Write the maximum number

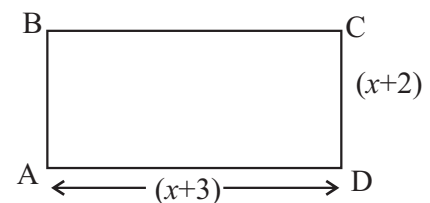
(ii) Write the minimum number

05. Find the value of x .



06. Find the profit obtain by a trader by selling 50 mangoes each Rs. 12.00 which bought at the price of Rs. 8 each.

07. Express the perimeter of the rectangle ABCD in terms of x .

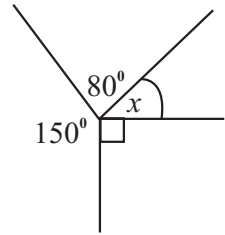


08. 7, 3, 11, 4, 12 What is the median of the given data.

09. $a(x + 3) + bx + 3b$, factorise.

10. $P = \{\text{odd numbers from 1 to 10}\}$, Represent the set P in a Venn diagram.

11. Find the value of x .



12. Write 47 as a base two number.

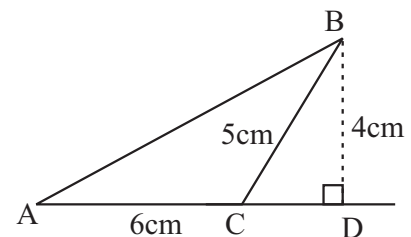
13.



Mark the inequality $x > -2$ on the number line.

14. The distance between two places in scale diagram drawn according to the ratio of 1 : 2000 is 8cm. Find the actual distance between two places.

15. Find the area of the triangle ABC.

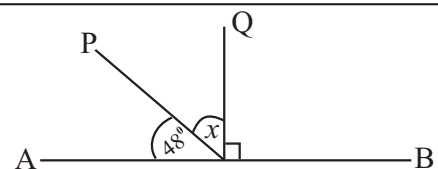


16. There are 300 mangoes in a heap. $\frac{3}{5}$ of the mangoes are ripe mangoes. What is the number of ripe mangoes?

17. There are 4 red pens and 3 blue pens of equal shape and size inside a box. A pen was taken out at random Find the probability of obtaining red pen.

18. If $x=2$, $y=2$, find the value of $4x+3y$

19. Find the value of x given in the figure



20. 3% discount is given when buying a Television of worth Rs. 60 000. Find the discount amount he received.

- Answer to the first question and 04 other questions.
- First question carries 16 marks and other questions carry 11 marks.

01. (a) In a drill display of inter house sport meet students are positioned as the pattern.

First row has 5 students,

Second row has 8 students,

Third row has 11 students,

And there were 18 rows prepared at that moment,

- Write the number of students in the 4th and 5th row separately. (02 marks)
 - Write the general term (T_n) for number of students in the n^{th} row. (04 marks)
 - Find the number of students in the last row. (03 marks)
 - Which row has 35 students starting from the first row? (03 marks)
- (b) Suraj join with a job of starting monthly salary is Rs. 36 000 and his salary increased by Rs. 300 in each year. After how many years he obtain salary of more than Rs. 40 000. (04 marks)

02. In the school Sremadana campaign $\frac{2}{5}$ of students placed to clean the ground and $\frac{3}{4}$ of the remaining students to clean the surrounded area of the buildings and the remaining students to paint the school desk and chairs.

- What fraction of students remains after place to clean the ground? (02 marks)
- What fraction of the students participated to clean the surround area of the building from total students? (03 marks)
- What fraction placed to clean the ground and surround area of the building from the total students? (03 marks)
- 400 students participated to this Sremadana campaign. If $\frac{3}{8}$ of are boys. Find the number of girls who are participated to this campaign. (03 marks)

03. (a) Using the data of given diagram (01)

- Find the value of x and given the reason. (02 marks)
- Find the value of y . (02 marks)
- Find the value a . (03 marks)

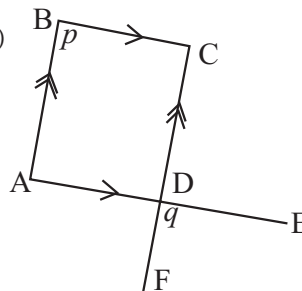


diagram (01)

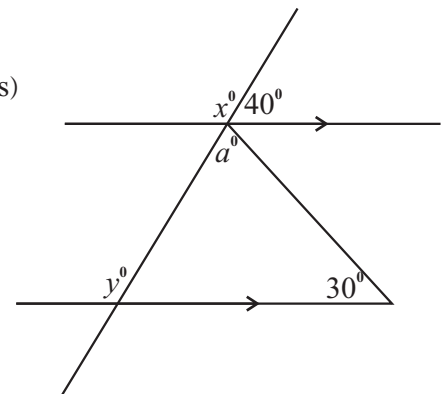


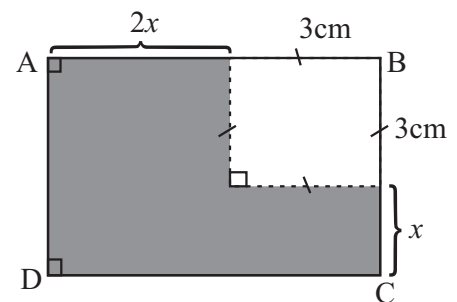
diagram (02)

- (b) Show that $\hat{ABC} = \hat{EDF}$ by using the data of given diagram (02) (04 marks)

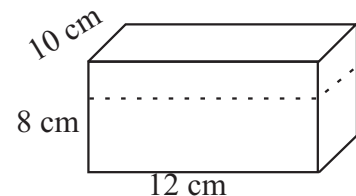
04. (a) The production cost of a cupboard is Rs. 31 250. The producer obtain Rs. 4 750 profit by selling the cupboard to a trader.
- What is the buying price of the cupboard by trader? (02 marks)
 - The trader mark the price of the cupboard by keeping 20% profit, What is the marked price of the cupboard? (03 marks)
 - When selling the cupboard Rs. 2 100 discount is given, what is the discount percentage given? (03 marks)
- (b) What is the buying price of shirt which sold to Rs. 1320 with a 10% profit? (03 marks)

05. Length of the rectangle ABCD is $2x + 3$.

- Write the breadth of rectangle in terms of x . (01 mark)
- Build up the binomial algebraic expression for the area of the rectangle ABCD in terms of x . (03 marks)
- Build up an expression for the area of shaded part and simplify. (02 marks)
- If $x = 6$ cm find the area of the shaded part. (03 marks)
- Write the simplest form of the ratio between shaded part and remaining part of the figure. (02 marks)



06. A vessel formed by plastic of transparent which length 12cm, breadth 10cm and height 8cm is filled with liquid of blue colour and formed a fancy item.
- Find the capacity of the vessel. (02 marks)
 - If liquid is filled up to 7cm. find the volume of liquid in the vessel. (02 marks)
 - If the liquid is in bottle of 125ml, then how many bottles need to buy prepare an item. (02 marks)
 - If the price of one bottle is Rs. 80, find the amount spend to prepare item (iii) above. (02 marks)
 - If the vessel kept taking smallest face as the base then what is the height of liquid. (03 marks)



07. The following table represents scores obtained by 11 players in a cricket match.

Player	1	2	3	4	5	6	7	8	9	10	11
Score	38	29	09	43	56	15	18	01	04	12	06

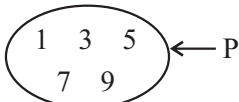
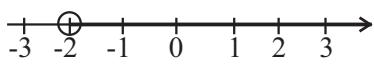
In the scores,

- What is the number of player who take minimum score ? (01 mark)
- What is the maximum score ? (01 mark)
- Find the range ? (01 mark)
- Find the median score ? (03 marks)
- Find the mean score ? (05 marks)

Answer Sheet

Part I

Part II

01.	23, 26	1+1	02	01.	(a) (i) 14, 17	1 + 1	02
02.	10000 _{two}		02		$3 \times 1 + 2$	01	
					$3 \times 2 \times 2$	01	
03.	$\frac{15}{28}$	01			$3 \times 3 + 2$	11	
	$\frac{9}{28} + \frac{6}{28}$	01	02		$3 \times n + 2$	$3n + 2$	1+1
					(ii) $3n + 2$		04
04.	38, 11	1+1	02		$3 \times 18 + 2$		1 + 1
05.	75^0		02		56	01	03
06.	Rs. 200	01			(b) 40000 - 36000	01	
	4×50 or $600 - 400$	01	02		$\frac{4000}{300}$ months	01	
07.	$4x + 2$	01			$= 13 \frac{1}{3}$	01	
	$2(x - 2) + 2(x + 3)$	01	02		$=$ after 14 years	01	04
08.	7		02				<u>16</u>
09.	$(a + b)(x + 3)$	01					
	$a(x + 3) + b(x + 3)$	01	02				
10.			02	02.	(i) $1 - \frac{2}{5} = \frac{3}{5}$	1+1	02
					(ii) $\frac{3}{5}$ of $\frac{3}{4} = \frac{9}{20}$	1+1+1	03
11.	$x = 40^0$	01			(iii) $\frac{2}{5} + \frac{9}{20} = \frac{8}{20} + \frac{9}{20} = \frac{17}{20}$	1+1+1	03
	$150 + 80 + 90 + x = 360$	01	02		(iv) 400 of $\frac{3}{8}$ or 400 of $\frac{5}{8}$	01	
12.	11111 _{two}		02		$400 - 150$	01	
13.		01+01	02		250	01	03
					$400 \times \frac{5}{8}$	01	
14.	160m	01			250		<u>11</u>
	1cm 20m	01	02	03.	(a) (i) $x = 140^0$	01	
	or 8cm 16000cm				(adjacent angle on a straight line)	01	02
15.	12cm^2		02		(ii) $y = 140^0$ (corresponding \angle)		02
	$\frac{1}{2} \times 6 \times 4$				(iii) $a = 360^0 (180 + 40 + 30)$	1+1+1	03
					$= 110^0$		
16.	180				(b) to proof	03	
	$300 \times \frac{3}{5}$	01	02		if one or more reason	01	04
17.	$\frac{4}{7}$		02				<u>11</u>
18.	17	01		04.	(a) (i) $31250 + 4750$	01	
	$4(2) + 3(3)$	01	02		$= \text{Rs. } 35000/-$	01	02
19.	$x = 42^0$	01			(ii) $\frac{120}{100} \times 35000 = 42000/-$	1+1+1	03
	$x + 48 = 90$	01	02		(iii) $\frac{2100}{42000} \times 100 = 5\%$	1+1+1	03
20.	Rs. 1800/-				(b) $\frac{100}{120} \times 1320 = 1200/-$	1+1+1	03
	$\frac{3}{100} \times 60000$	01	02				<u>11</u>
			<u>40</u>				

Answer Sheet

05.	(a) (i) $x + 3$		01			
	(ii) $(2x + 3)(x + 3)$		03			
	$2x^2 + 9x + 9$					
	(iii) $2x^2 + 9x + 9 - 9$	01				
	$2x^2 + 9x$	01	02			
	(iv) $2(6)^2 + 9(6)$	1+1+1	03			
	cm^2					
	(b) $126 : 9 \quad 14 : 1$		02			
			11			
06.	(i) $12 \times 10 \times 8 = 960\text{cm}^3$	1+1	02			
	$/ 960\text{ml}$					
	(ii) $12 \times 10 \times 7 = 840\text{cm}^3$	1+1	02			
	$/ 840\text{ml}$					
	(iii) $\frac{840}{120} \quad 7$		02			
	(iv) $7 \times 80 = \text{Rs. } 560/-$		02			
	(v) $10 \times 8 \times h = 840$	1+1				
	$h = \frac{840}{80} = 10.5\text{cm}$	01	03			
			11			
07.	(i) 8		01			
	(ii) 56		01			
	(iii) $56 - 1 = 55$		02			
	(iv) 15		03			
	(v) 21		04			
			11			