PROVINCIAL DEPARTMENT OF EDUCATION - NORTH WESTERN PROVINCE

Second Term Test 2018
MATHEMATICS

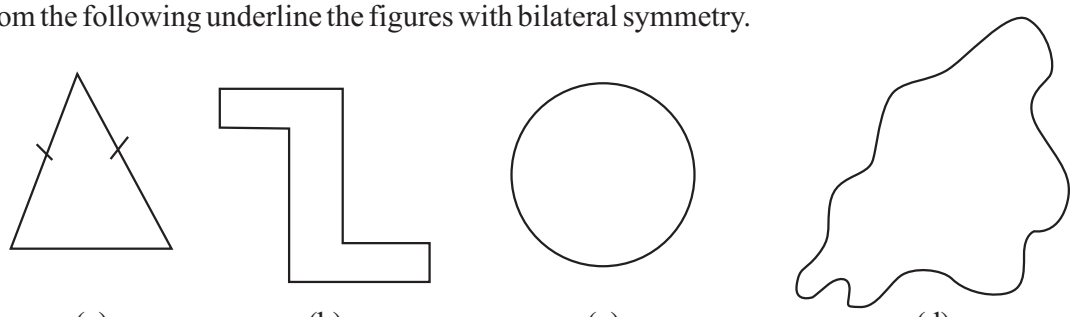
Grade 8 **Time : 02 hours**

Name / Index No.

- **Answer 1st 20 questions on this paper itself.**
  Correct answer for each question carries two marks. (02 x 20 = 40)

Part I

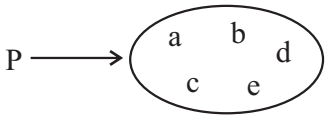
01. From the following underline the figures with bilateral symmetry.



(a) (b) (c) (d)

02. Calculate, $\frac{3}{8} + \frac{5}{24}$

03. According to the given Venn diagram find **n(P)**.



04. Write the reciprocal of, $\frac{5}{8}$

05. Calculate, **5.6 x 3.3**

06. Calculate,

	t	Kg
	3	750
+	5	922

07. Write the number of edges and vertices in a regular octahedron,

08. Calculate, $3\frac{1}{5}$ x $5\frac{5}{8}$

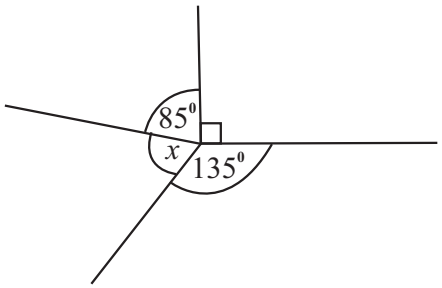
09. If, **625** **25** = **25** find the value of **625** **0.25**

10. If, the ratio between A and B is 3 : 4 and the ratio between B and C is 5 : 2, find the ratio in A, B and C.

11. Find the value of, $\sqrt{\mathbf{324}}$

12. Simplify, **(-5) - (-7)**

13. Find the value of x.



14. Find the value of, **15 x 2.8**

15. Express $(\mathbf{a \times b})^3$ as a product of powers.

16. Factorize **15a + 18b**

17. Write **8a + 4ab - 4ac** as a product of two factors.

18. Find the value of, $(\mathbf{-1})^5$

19. If P = {Quadrilaterals}, write 4 elements of P.

20. Amitha, Sunetha and Dilupa are friends. The ratio of their weights is 6 : 4 : 5. If Sunetha's weight is 40kg. Find the weight of Dilupa.

- **Answer the first question and four other questions. (16 marks for the first question and 11 marks for each other questions.)**

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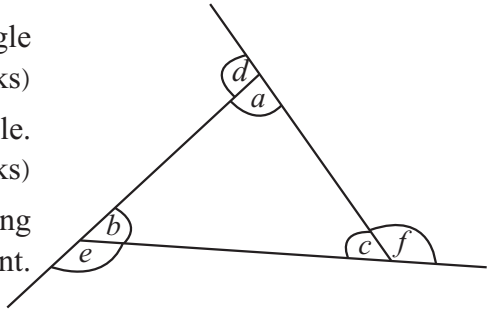
01. (a) (i) Find the three interior angles of the above triangle and name them by given symbols. (02 marks)



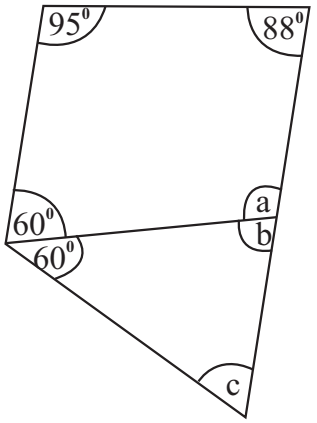
(ii) Write the three exterior angles of the above triangle. (02 marks)

(iii) Draw a rough sketch, that we can make by pasting d, e, f angles as their vertices meet at a same point. (02 marks)

(iv) Write the suitable value in the blanks.

(a) The sum of their interior angles of a triangle is ..... and the sum of its exterior angles is, ...

(b) The sum of the interior angles of a quadrilateral is ..... and the sum of its exterior angles is ..... (04 marks)



(b) Find the values of the following angles,

a = b =

c = (06 marks)

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02. (a) (i) Write an equivalent fraction for, $\frac{2}{5}$ (01 mark)

(ii) Write $3\frac{3}{7}$ as an improper fraction. (01 mark)

(b) Simplify,

(i) $\frac{3}{8} \times \frac{5}{12}$ (02m.) (ii) $3\frac{2}{7} \times \frac{14}{23}$ (02 marks)

(iii) $\frac{8}{11} \quad 4\frac{4}{5}$ (02m.) (iv) $\left(\frac{2}{3} - \frac{1}{2}\right) \quad \frac{7}{12}$ (03 marks)

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03. (a) Calculate,

(i) 3.42 x 0.84 (02m.) (ii) 825 1.5 (02 marks)

(b) (i) Fill the blank cage,

$\square$: 2 = 20 : 8 (02 marks)

(ii) Nimal and Kamal have an amount of money in the ratio 7 : 5. Represent the amount with Nimal as a fraction out of the total. (02 marks)

(iii) A father divided Rs. 2000/= among his wife, daughter and son in the ratio of 5 : 2 : 3. Find the amount of money that the son received. (03 marks)

04. (a) Solve following equations,

(i) $\frac{x}{2} = 35$ (02 marks) (ii) $3y + 2 = 11$ (02 marks)

(iii) $4\left(\frac{y}{2} - 2\right) = 20$ (03 marks)

(b) Nimal has Rs. x. Sunil has Rs. 100 more than three times of the amount of Nimal.

(i) Write a suitable algebraic expression to represent the amount of money Sunil has. (01 mark)

(ii) If the amount of money Sunil has is Rs. 850, Calculate th amount of money that Nimal has. (03 marks)

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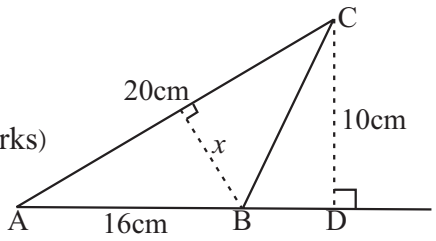
05. (a) (i) Calculate the area of the triangle A B C according to the given diagram. (03 marks)

(ii) Find the length denoted by x in the diagram. (03 marks)

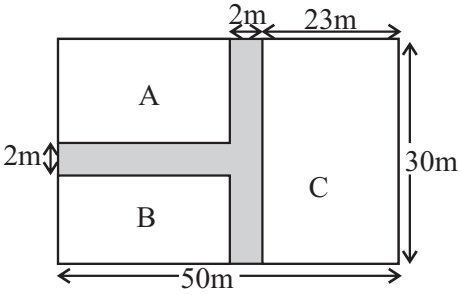


(b) The following diagram shows a sketch of a rectangular piece of land.

(i) Calculate the area of the land. (02 marks)

(ii) Shaded areas in th diagram are the roads reserved for the lots **A, B** and **C**. Calculate the total area reserved for roads. (02 marks)

(iii) Find the remaining area of the land, after reserving for roads. (03 marks)



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06. (a) (i) Write 32% as a fraction in the simplest form. (02 marks)

(ii) Write the ratio 12 : 25 as a percentage. (02 marks)

(iii) Out of the number of fruits in a bag, **20%** is Guava. If the total weight of this bag is **2kg** calculate the weight of Guava in it. (03 marks)

(b) At the beginning, there were 200 workers in a sugar factory 40% of them were female. After 2 months, 15 female workers went abroad. Male workers were joined instead of them.

(i) What is the number of male workers at the beginning. (02 marks)

(ii) Find the difference the number of male and female workers after two months. (02 marks)

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07. (a) Copy of following table and fill the blanks.

Plane figure	Number of axes of bilateral symmetry	Order of rotational symmetry
Equilateral triangle	3	.....
Parallelogram	.....	2
Rhombus	.....	.....
Regular hexagon	5	.....

(05 marks)

(b) X = {the letters in the word ANURADHAPURA}

(i) Write the elements of the set using set notation. (02 marks)

(ii) If A is a null set, write a example for A. (02 marks)

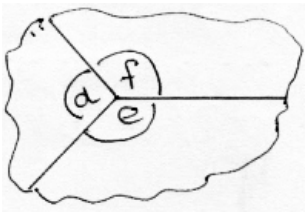
(iii) Write the set A using symbols. (02 marks)

Answer Sheet

Part I

01.	a and c		02
	1 mark for each answer	01	
02.	$\frac{3}{8} + \frac{5}{24}$		
	$\frac{9}{24} + \frac{5}{24}$	01	
	$= \frac{14}{24}$	01	02
	$= \frac{7}{12}$		
03.	n(P) = 5		02
04.	$\frac{8}{5}$		02
05.	5.6 x 3.3		
	= 18.48		02
06.	9t 672kg		02
07.	Edges = 12	01	
	Vertices = 6	01	02
08.	$3\frac{1}{5} \times 5\frac{5}{8}$		
	$\frac{16}{5} \times \frac{45}{8}$	01	
	$^{2}\cancel{16}_{1}\cancel{5} \times \frac{\cancel{45}^{9}}{\cancel{8}_{1}}$		
	= 18	01	02
09.	2500		02
10.	15 : 20 : 8		02
11.	$\sqrt{324}$ = 2|324, 2|162, 3|81, 3|27, 3|9, 3|3, 1 — 2 x 3 x 3 = 18		
	Divide by prime numbers	01	
	2 x 3 x 3		
	= 18	01	02
12.	(-5) - (-7)		
	-5 + 7	01	
	= +2	01	02
13.	$85^0 + 90^0 + 135^0 = 310^0$	01	
	$x = 360^0 - 310^0 = 50^0$	01	02
14.	42 or 42.0		02
15.	$a^3 \times b^3$		02
16.	15a + 18b		
	= 3(5a + 6b)	1+1	02
17.	8a + 4ab - 4ac		
	= 4a(2 + b - c)		02
18.	-1		02
19.	Square, parallelogram, trapezium rectangle, rhombus		
	four from this		
	1 for two correct answers		02
20.	Amitha : Suneetha : Dilupa		
	6 : 4 : 5		
	↓		
	$\frac{4}{15}$		
	$\frac{4}{15}$ = 40kg	01	
	$\frac{40}{4} \times 5 = 50$kg	01	02
			40

Part II

01.	(a) (i) a, b, c		
	for 3 correct answers	02	
	for 2 correct answers	01	02
	(ii) d, e, f		
	for 3 correct answers	02	
	for 2 correct answers	01	02
	(iii) 		02
	(iv) (a) 180^0	01	
	360^0	01	
	(b) 360^0	01	
	360^0	01	04
	(b) a = 117^0	02	
	b = 63^0	02	
	c = 57^0	02	06
			16
02.	(a) (i) $\frac{4}{10}$ or $\frac{6}{15}$ or $\frac{8}{20}$		
	for suitable answer		01
	(ii) $\frac{24}{7}$		01
	(b) (i) $\frac{3}{8} \times \frac{5}{12}$		

	$= \frac{\cancel{2}^{1}}{8} \times \frac{5}{\cancel{12}_{4}}$	01	
	$\frac{5}{32}$	01	02
	(ii) $3\frac{2}{7} \times \frac{14}{23}$		
	$\frac{23}{7} \times \frac{14}{23}$	01	
	$\frac{\cancel{23}^{1}}{\cancel{7}_{1}} \times \frac{\cancel{14}^{2}}{\cancel{23}_{1}}$		
	$= 2$	01	02
	(iii) $\frac{8}{11} \quad 4\frac{4}{5}$		
	$= \frac{8}{11} \quad \frac{24}{5}$	01	
	$= \frac{\cancel{8}^{1}}{11} \times \frac{5}{\cancel{24}_{3}}$		
	$= \frac{5}{33}$	01	02
	(iv) $\left(\frac{2}{3} - \frac{1}{2}\right) \quad \frac{1}{12}$		
	$= \left(\frac{4}{6} - \frac{3}{6}\right) \quad \frac{7}{12}$		
	$= \frac{1}{6} \quad \frac{7}{12}$	01	
	$= \frac{1}{6} \times \frac{12}{7}$	01	
	$= \frac{2}{7}$	01	03
			11
03.	(a) (i) 3.4 2		
	x 0.84		
	2736	01	
	1368		
	2.8728	01	02
	(ii) 825 1.5		
	$\frac{8250}{15}$	01	
	$= 550$	01	02
	(b) (i) 5		02
	(ii) Nimal : Kamal		
	7 : 5		
	For Nimal $\frac{7}{12}$		02

	(iii) Wife : Daughter : Son		
	5 : 2 : 3	01	
	$\downarrow$		
	$\frac{3}{10}$		
	$2000 \times \frac{3}{10}$	01	
	$= \text{Rs. } 600.00$	01	03
			11
04.	(a) (i) $\frac{x}{2} = 35$		
	$x = 2 \times 35$	01	
	$x = 70$	01	02
	(ii) $3y + 2 = 11$		
	$3y = 11 - 2$		
	$3y = 9$	01	
	$y = \frac{9}{3}$		
	$y = 3$	01	02
	(iii) $4\left(\frac{y}{2} - 2\right) = 20$		
	$\frac{y}{2} - 2 = \frac{20}{4}$	01	
	$\frac{y}{2} = 5 + 2$		
	$\frac{y}{2} = 7$	01	
	$y = 7 \times 2$		
	$y = 14$	01	03
	(b) (i) $3x + 100$		01
	(ii) $3x + 100 = 850$	01	
	$3x = 850 - 100$		
	$3x = 750$	01	
	$x = \frac{750}{3}$		
	$x = 250$		
	Amount of money with Sunil $= \text{Rs. } 250$	01	03
			11
05.	(a) (i) $\frac{1}{2}$ x base x perpendicular height	01	
	$= \frac{1}{2} \times 16 \times 10$	01	
	$= \frac{1}{\cancel{2}} \times 16 \times \cancel{10}^{5}$		
	$= 80\text{cm}^2$	01	03
	(ii) $\frac{1}{2} \times 20 \times x = 80$	01	

Answer Sheet

	$\frac{1}{\cancel{2}_1} \times \cancel{20}^{10} \times x = 80$	01	
	$10x = 80$	01	
	$x = \frac{80}{10}$		
	$x = 8$ cm	01	03
(b) (i)	50m x 30m	01	
	$= 1500m^2$	01	02
(ii)	$(30 \times 2)m^2 + (25 \times 2)m^2$		
	$= 60m^2 + 50m^2$	01	
	$= 110m^2$	01	02
(iii)	$1500m^2 - 110m^2$		
	$= 1390m^2$		01
			11
06. (a) (i)	$\frac{32}{100}$	01	
	$= \frac{8}{25}$	01	02
(ii)	12 : 25		
	12 x 4 : 25 x 4		
	48 : 100	01	
	48%	01	02
(iii)	2kg x $\frac{20}{100}$	01	
	2000g x $\frac{20}{100}$		
	$\cancel{2000}$ g x $\frac{20}{\cancel{100}}$	01	
	= 400g	01	03
(b) (i)	Male employee percentage	01	
	= 100 - 40		
	= 60%		
	200 x $\frac{60}{100}$		
	= 120	01	02
(ii)	Female employees after 2 months = 80 - 15		
	= 65		
	Male employees after 2 months = 120 + 15		
	= 135		
	Difference = 135 - 65	01	
	= 70	01	02
			11

07. (a) (i)	3	3		01	
	0	2		01	
	2	2		02	
	5	5		01	05
(b) (i)	X = {A, N, U , R, D, H, P}				
	All elements are connect			02	
	At least 5 elements correct			01	02
(ii)	A = {Animals with fethers}				
	A = {multiples of 6 between 1 and 5}				
	or any suitable answer				02
(iii)	A = or A = { }				02
					11