PROVINCIAL DEPARTMENT OF EDUCATION - NORTH WESTERN PROVINCE

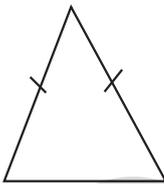# Second Term Test 2018
MATHEMATICS

Grade 8

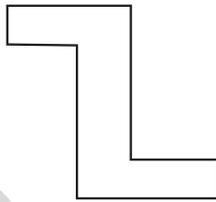**Time : 02 hours**

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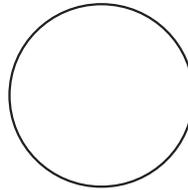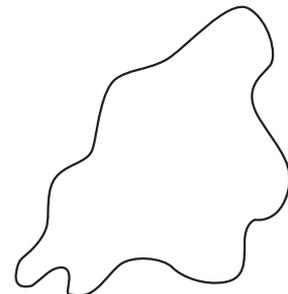
    (a)   (b)   (c)   (d)

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

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

    P $\longrightarrow$ (a b d c e)
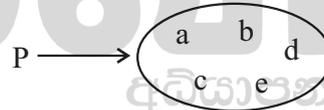
04. Write the reciprocal of, $\dfrac{5}{8}$

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, $3\dfrac{1}{5} \times 5\dfrac{5}{8}$

01

09. If, **625 $\div$ 25 = 25** find the value of **625 $\div$ 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, $\sqrt{324}$

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

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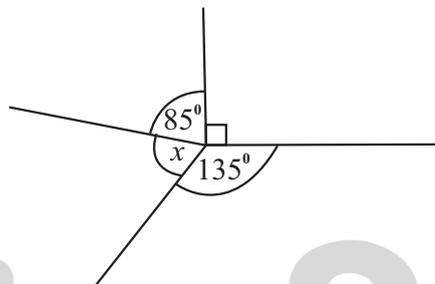
14. Find the value of, **15 x 2.8**

15. Express **(a x 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, **(-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.)**

_____

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)

_____

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

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

(b) Simplify,

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

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

_____

03. (a) Calculate,

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

(b) (i) Fill the blank cage,

☐ : 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)

03

04. (a) Solve following equations,

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

   (iii) $4\left(\dfrac{y}{2} - 2\right) = 20$ (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)

---

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

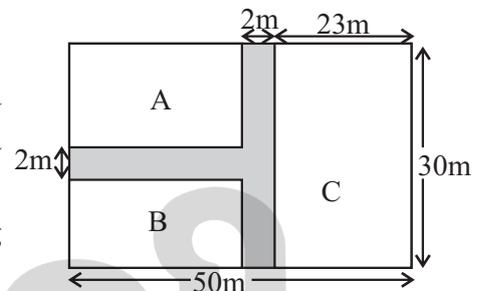   (ii) Find the length denoted by x in the diagram. (03 marks)
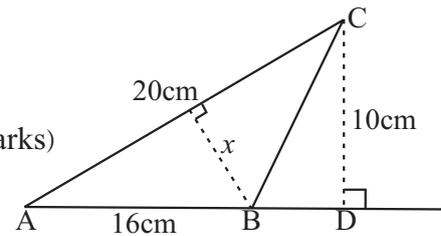
(b) The following diagram shows a sketch of a rectangular piece of land.

    (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)

---

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)

---

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	....

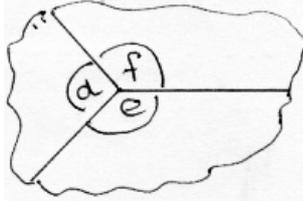(b) X = {the letters in the word ANURADHAPURA}   (05 marks)

    (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)

04

Answer Sheet

Part I

01.	a and c		02
	1 mark for each answer	01	

02. $\dfrac{3}{8} + \dfrac{5}{24}$

$\dfrac{9}{24} + \dfrac{5}{24}$ 01

$= \dfrac{14}{24}$ 01   02

$= \dfrac{7}{12}$

03. $n(P) = 5$ 02

04. $\dfrac{8}{5}$ 02

05. 5.6×3.3
$= 18.48$ 02

06. 9t 672kg   02

07. Edges = 12   01
Vertices = 6   01   02

08. $3\dfrac{1}{5} \times 5\dfrac{5}{8}$

$\dfrac{16}{5} \times \dfrac{45}{8}$ 01

$\dfrac{^2 \cancel{16}}{^1 \cancel{5}} \times \dfrac{\cancel{45}^9}{\cancel{8}^1}$

$= 18$ 01   02

09. 2500   02

10. 15 : 20 : 8   02

11. $\sqrt{324} = 2\underline{|324}$
$\phantom{\sqrt{324} = }2\underline{|162}$ $2 \times 3 \times 3$
$\phantom{\sqrt{324} = }3\underline{|81}$ $= 18$
$\phantom{\sqrt{324} = }3\underline{|27}$
$\phantom{\sqrt{324} = }3\underline{|9}$
$\phantom{\sqrt{324} = }3\underline{|3}$
$\phantom{\sqrt{324} = }1$

Divide by prime numbers   01
$2 \times 3 \times 3$
$= 18$ 01   02

12. $(-5) - (-7)$
$-5 \oplus 7$ 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
       ↓
     $\dfrac{4}{15}$

$\dfrac{4}{15} = 40$kg   01

$\dfrac{40}{4} \times 5 = 50$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) $\dfrac{4}{10}$ or $\dfrac{6}{15}$ or $\dfrac{8}{20}$
for suitable answer   01

(ii) $\dfrac{24}{7}$ 01

(b) (i) $\dfrac{3}{8} \times \dfrac{5}{12}$

$= \dfrac{\cancel{8}^{\,1}}{8} \times \dfrac{5}{\cancel{12}_{4}}$	01	
$\dfrac{5}{32}$	01	02

(ii) $3\dfrac{2}{7} \times \dfrac{14}{23}$

$\dfrac{23}{7} \times \dfrac{14}{23}$ 01

$\dfrac{\cancel{23}^{\,1}}{\cancel{7}_{1}} \times \dfrac{\cancel{14}^{\,2}}{\cancel{23}_{1}}$

$= 2$ 01   02

(iii) $\dfrac{8}{11} \quad 4\dfrac{4}{5}$

$= \dfrac{8}{11} \quad \dfrac{24}{5}$ 01

$= \dfrac{\cancel{8}^{\,1}}{11} \times \dfrac{5}{\cancel{24}_{3}}$

$= \dfrac{5}{33}$ 01   02

(iv) $\left(\dfrac{2}{3} - \dfrac{1}{2}\right) \quad \dfrac{1}{12}$

$= \left(\dfrac{4}{6} - \dfrac{3}{6}\right) \quad \dfrac{7}{12}$

$= \dfrac{1}{6} \quad \dfrac{7}{12}$ 01

$= \dfrac{1}{6} \times \dfrac{12}{7}$ 01

$= \dfrac{2}{7}$ 01   03

11

03. (a) (i)

```
  3.4 2
x 0.84
-------
 2736
1368
-------
2.8728
```
01   01   02

(ii) $825 \quad 1.5$

$\dfrac{8250}{15}$ 01

$= 550$ 01   02

(b) (i) 5 02

(ii) Nimal : Kamal

    7 : 5

For Nimal $\dfrac{7}{12}$ 02

(iii) Wife : Daughter : Son

   5 :   2   :   3   01

         $\downarrow$

        $\dfrac{3}{10}$

$2000 \times \dfrac{3}{10}$ 01

$= $ Rs. 600.00 01   03

11

04. (a) (i) $\dfrac{x}{2} = 35$

$x = 2 \times 35$ 01

$x = 70$ 01   02

(ii) $3y + 2 = 11$

$3y = 11 - 2$

$3y = 9$ 01

$y = \dfrac{9}{3}$

$y = 3$ 01   02

(iii) $4\left(\dfrac{y}{2} - 2\right) = 20$

$\dfrac{y}{2} - 2 = \dfrac{20}{4}$ 01

$\dfrac{y}{2} = 5 + 2$

$\dfrac{y}{2} = 7$ 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

$x = \dfrac{750}{3}$

$x = 250$

Amount of money with

Sunil $=$ Rs. 250 01   03

11

05. (a) (i) $\dfrac{1}{2} \times$ base $\times$ perpendicular height   01

$= \dfrac{1}{2} \times 16 \times 10$ 01

$= \dfrac{1}{\cancel{2}} \times 16 \times \cancel{10}^{\,5}$

$= 80\text{cm}^2$ 01   03

(ii) $\dfrac{1}{2} \times 20 \times x = 80$ 01

		$\frac{1}{\cancel{2}_1} \times \cancel{20}^{10} \times x = 80$	01		07.	(a) (i)	3　3	01

$\frac{1}{\cancel{2}_1} \times \cancel{20}^{10} \times x = 80$ 　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) $2kg \times \frac{20}{100}$ 　01

$2000g \times \frac{20}{100}$

$20\cancel{00} \times \frac{20}{1\cancel{00}}$ 　01

$= 400g$ 　01 　03

(b) (i) Male employee percentage 　01
$= 100 - 40$
$= 60\%$

$200 \times \frac{60}{100}$
$= 120$ 　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