PROVINCIAL DEPARTMENT OF EDUCATION - NORTH WESTERN PROVINCE

SECOND TERM TEST 2019
MATHEMATICS

Grade 07   **Two hours**
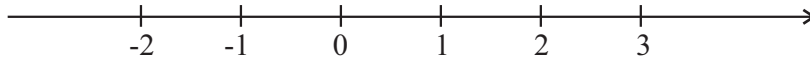
Name / Index No. :

PART - I

- **Answer the questions from 01 - 20 on the paper itself.**
- **Each question in Part I carries 2 marks.**

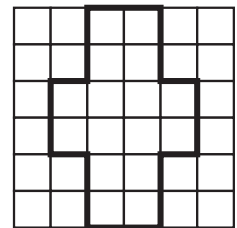01. Select and underline the improper fractions from the followings.

$$\frac{2}{3} \ , \ \frac{7}{5} \ , \ 1\frac{2}{3} \ , \ \frac{5}{4} \ , \ \frac{2}{5}$$
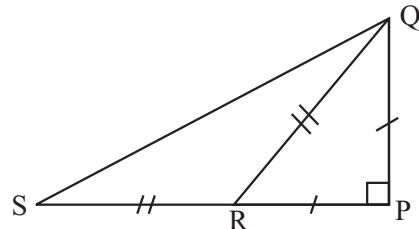
02. Simplify,   2 + 4 x 2

03. Find the value of 2 + (-3) using the number line.

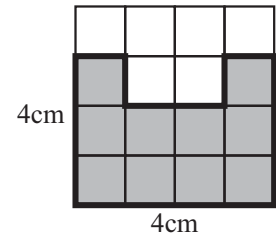04. Draw all the axes of symmetry of the figure.

05. Name a scalene triangle and a right angled isosceles triangle in the figure given below.

06. The height of Samanthi who is in grade 7A, is 145cm. Express her height in metres.
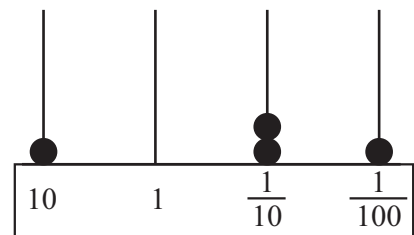
07. Simplify,   2a + 3b - a + b

08. Find the perimeter of the shaded part.

4cm

4cm

09. What is the radius of a circle drawn by taking the straight line segment AB = 10cm as its diameter?
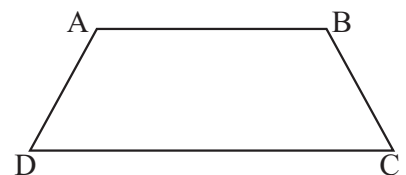
10. What could be the minimum number of sides of a concave polygon?

11. Write the number illustrated in the abacus.

| 10 | 1 | $\frac{1}{10}$ | $\frac{1}{100}$ |

12. A = {Multiples of 2 from 1 to 10} Write set A as a list of elements within curly brackets.

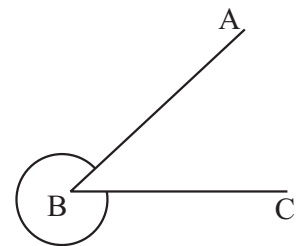13. ABCD is a trapezium. Mark the pair of parallel sides of this figure using symbols.

A   B

D   C

14. If, 8 $= 2 \times 2 \times 2 = 2^3$
    12 $= 2 \times 2 \times 3 = 2^2 \times 3$
    24 $= 2 \times 2 \times 2 \times 3 = 2^3 \times 3$
    Find the least common multiple of 8, 12, 24

15. Kaveesha's date of birth is 2009.04.08. Ameesha is younger than her by 4 years 3 months and 9 days. Find Ameesha's date of birth.

16. Name the angle marked in the diagram.
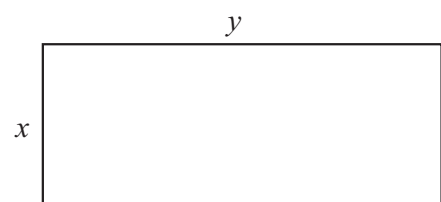

17. The volume of a cuboid shaped wooden block is 100cm³. If its length and breadth are 10cm and 5cm respectively. Find the height of the wooden block.

18. Express in millilitres, $5l$ $50ml$

19. Name two regular polygons.

20. The area of the rectangle given below is A. Build up a simple formula for the area (A) in terms of x and y.

PART - II

_____

01. (a) Remind the activity that you have done in the lesson "circles".

     (i)   Name the mathematical instrument used to draw circles in that activity.   (01 mark)

     (ii)   Construct a circle of radius 3cm, by using that instrument.   (02 marks)

    (b) (i)   Draw a straight line segment PQ such that PQ = 6cm.   (01 mark)

     (ii)   Draw a circle of radius 4cm, by taking P as the centre.   (01 mark)

     (iii) Draw a circle of radius 4cm, by taking Q as the centre.   (01 mark)

     (iv) Name the two intersection points of the circles as R and S.   (02 marks)

     (v)   Complete the two triangles PRQ and PSQ by joining the relevant points.   (02 marks)

    (c) (i)   To what type of triangles does PRQ triangle belong, when classifying triangles according to their sides?   (02 marks)

     (ii)   To what type of triangles does PRQ triangle belong, when classifying triangles according to their angles?   (02 marks)

     (iii) Kumara says that the quadrilateral PRQS is a regular polygon. Do you agree with him? Give reasons.   (02 marks)

_____

02. The diagrams given below show the amounts of chocolates received by Nelum and Manel.

     Nelum   Manel
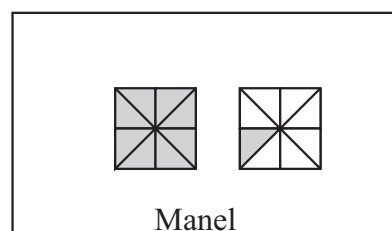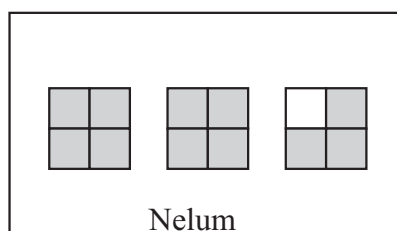
    (i)   Write the amounts of chocolates received by Nelum and Manel separately.   (02 marks)

    (ii) Express the amounts of chocolates received by Nelum and Manel as improper fractions.   (02 marks)

    (iii) What is the total amount of chocolates received by both?   (02 marks)

    (iv) How many more chocolates received by Nelum than Manel?   (02 marks)

    (iv) Express the amount of chocolates received by Manel as a decimal.   (03 marks)

03. The masses of Nitrogen, Potassium and Phosphorus in a bag of N.P.K. fertilizer are marked as follows.

Nitrogen (N) - 60g 200mg
Phosphrus (P) - 120g 450mg
Potassium (K) - 300g 350mg
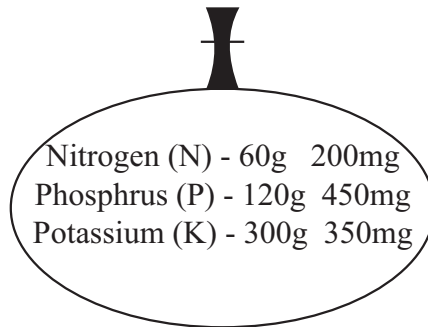
(a) (i)   Find the total mass of the nutrients in this bag of fertilizer.   (02 marks)

(ii)   Write the mass of Nitrogen in the bag of fertilizer in mg.   (02 marks)

(iii)   If the total mass of the bag of fertilizer is 500g, find the mass of the empty bag. (02 marks)
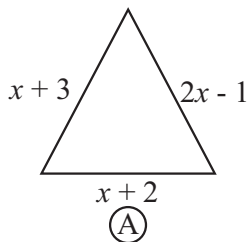
(b) Simplify,

(i)

g	mg
7	480
x	6

                                          (02 marks)

(ii)   10g 611mg ÷ 9   (03 marks)

04. (a)

Figure A (triangle): sides $x + 3$, $2x - 1$, base $x + 2$
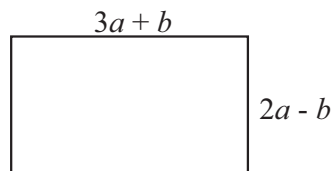
Figure B (rectangle): top $3a + b$, side $2a - b$

(i)   Express the perimeter of figure Ⓐ, as an algebraic expression.   (01 mark)

(ii)   Simplify the above expression and write it in the simplest form.   (02 marks)

(iii)   If $a = 6$, $b = 2$, obtain the values of the length and breadth of the rectangle. (04 marks)

(iv)   Find the area of figure Ⓑ, using the values you obtained above.   (01 mark)

(b) Simplify,

(i)   (ii)

m	cm
7	65
+ 2	25

(01 mark)

cm	mm
35	8
- 22	9

(02 marks)

05. (a) (i) Write 125 as a power with base 5. (02 marks)

(ii) Expand, $3^2 x^3$ (02 marks)

(iii) Find the value of $a^3 b^2$, when $a = 3$ and $b = 2$. (02 marks)

(b) Evaluate,

(i) 4.52×10 (01mark)

(ii) 0.875×6 (02 marks)

(iii) $8.94 \div 3$ (02 marks)

---

06. (a) Build up simple equations for each of the situations given below.

(i) When 4 is added to x, the result is 12. (02 marks)

(ii) When 3 is subtracted from twice of a, the result is 7. (02 marks)

(b) Solve,

(i) $x + 7 = 15$ (02 marks)

(ii) $3x - 2 = 13$ (02 marks)

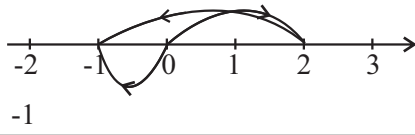(c) Solve the equation $2x + 1 = 5$, using a flow diagram. (03 marks)

---
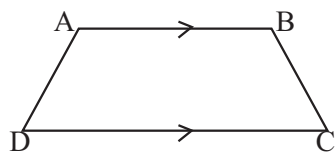
07. Amasha took the measurements of the fish tank and noted down in a diagram as follows.
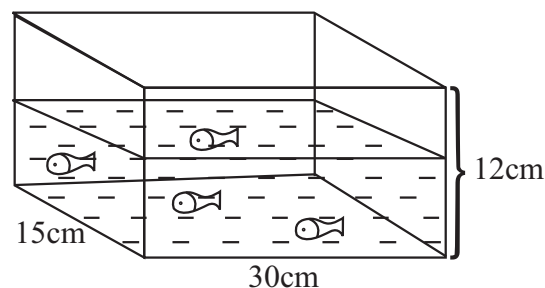
(i) Find the area of the base of the tank. (02 marks)

(ii) If the tank is filled with water to a height of 10cm, find the volume of water in the tank in cm^3. (02 marks)

(iii) If $1cm^3 = 1ml$, find the volume of water in the tank in ml. (02 marks)

(iv) Find the volume of the empty space of the tank in cm^3. (02 marks)

(v) If Amasha decided to decorate the open end of the tank by pasting a green colour tape, calculate the minimum length of the tape she needs. (03 marks)

ANSWER PAPER

PART - I

01.	$\dfrac{7}{5}$ $\dfrac{5}{4}$	01 01	02
02.	2 + 8 10	01 01	02
03.	 -1	01 01	02
04.	2 ක් ඇදීම	02	02
05.	PSQ Δ PQR Δ	01 01	02
06.	145 ÷ 100 1.45m	 02	02
07.	a + 4b	02	02
08.	16cm	02	02
09.	අරය 5cm	02	02
10.	4 කි	02	02
11.	10.21	02	02
12.	A = {2, 4, 6, 8, 10}	02	02
13.		02	02
14.	2^3 x 3 24	01 01	02
15.	අ මා දි 2009 04 08 + 4 03 09 2013 07 17	 01 01	02
16.	පරාවර්ත $A\hat{B}C$	02	02
17.	$\dfrac{100}{10 \times 5}$ 2	01 01	02
18.	5050*ml*	02	02
19.	සමචතුරස්‍රය, සමපාද Δ වැනි නිවැරදි පිළිතුරු 2	02	02
20.	A = xy	02	02
			40

PART - II

01.	(a) (i) කවකටුව (ii) නිර්මාණයට	01 02	03
	(b) (i) නිර්මාණයට (ii) නිර්මාණයට (iii) නිර්මාණයට (iv) නම් කිරීමට (v) නිර්මාණයට	01 01 01 02 02	07
	(c) (i) සමද්විපාද ත්‍රිකෝණ (ii) මහාකෝණික ත්‍රිකෝණ (iii) නැත පාද සමාන වුවද කෝණ සමාන නොවන බැවින්	02 02 02	06
			16
02.	(i) නෙළුම්ට - $2\dfrac{3}{4}$ මානෙල්ට - $1\dfrac{1}{8}$	01 01	02
	(ii) $\dfrac{11}{4}$ $\dfrac{9}{8}$	01 01	02
	(iii) $2\dfrac{3}{4} + 1\dfrac{1}{8}$ $(2 + 1) + \left(\dfrac{3}{4} + \dfrac{1}{8}\right)$ $3 + \dfrac{7}{8}$ ඕනෑම ක්‍රමයකට $3\dfrac{7}{8}$	 01 01	02
	(iv) $2\dfrac{3}{4} - 1\dfrac{1}{8}$ $(2 - 1) + \left(\dfrac{3}{4} - \dfrac{1}{8}\right)$ $1 + \dfrac{5}{8}$ $1\dfrac{5}{8}$	 01 01	02
	(v) $1\dfrac{1}{8}$ $1 + \dfrac{1}{8} \times 125$ $\quad\quad\quad\quad \times 125$ $1 + \dfrac{125}{1000}$ 1.125	01 01 01 01	03
			11

පිළිතුරු පත්‍රය

03.	(a)	(i)	g mg			

03. (a) (i)
```
        g      mg
       60     200
      120     450
    + 300     350
    ─────────────
      481     000        481g        02    02
```

     (ii) 60200mg   02   02

     (iii)
```
      g
    500
  - 481              01
  ─────
   19  g             01    02
```

(b) (i)   44g   680mg   02   02

     (ii)
```
        1  179
     9│10  611
        9
     ───────
     1→1000          03    03
        1611
        1611
    ──────────
           0
```
         11

04. (a) (i) $x + 3 + 2x - 1 + x + 2$ 01   01

     (ii) $x + 2x + x + 3 - 1 + 2$ 01

         $4x + 4$ 01   02

     (iii) දිග $= 3a + b$

          $= 3 \times 6 + 2$ 01

          $= 20$ 01

         පළල $= 2a - b$

          $= 2 \times 6 - 2$ 01

          $= 10$ 01   04

     (iv) $20 \times 10 = 200$ 01   01

(b) (i)   9m   90cm   01   01

     (ii) 12cm   9mm   02   02

         11

05. (a) (i) 5^3 02   02

     (ii) $3 \times 3 \times x \times x \times x \times x$ 02   02

     (iii) $a^3 \ b^2$

         $3^3 \times 2^2$ 01

         27×4 01

         108   02

(b) (i)   45.2   01   01

     (ii) 5.250   02   02

     (iii) 2.98   02   02

         11

06 (a) (i) $x + 4 = 12$ 02   02

     (ii) $2a - 3 = 7$ 02   02

(b) (i) $x + 7 - 7 = 15 - 7$ 01

         $x = 8$ 01   02

     (ii) $3x - 2 + 2 = 13 + 2$ 01

          $3x = 15$

           $x = 5$ 01   02

(c)   නිවැරදි ගැලීම් සටහන   01

     ප්‍රතිලෝම ගැලීම් සටහන   01

     පිළිතුරැ   01   02

         11

07. (i)   30 x 15   01

       450cm²   01   02

(ii)   450 x 10   01

       4500cm³   01   02

(iii) 4500ml 02   02

(iv) 450 x2   01

       900cm³   01   02

(v)   පරිමිතිය $= 30 + 30 + 15 + 15$ 01

        $= 90$cm   01

     දිග   90cm   01   03

         11