ASIAN GRAMMAR SCHOOL

Grade – 8

1st Term Exam - 2019

MATHEMATICS

Duration - $2\frac{1}{2}$ hours

Answer any 6 questions.

Prepared by : Mr. Joseph

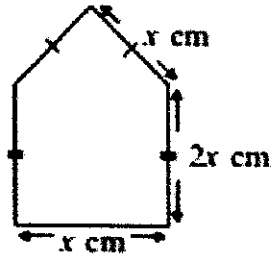
(1) Remind the activities done at the classrooms by studying the lesson perimeter

a) The length of a wire is **42cm.**

i) How much is the **length of a side** of an **equilateral triangle** made by it.

ii) How much is the **length** of a rectangle of **breadth 8cm** made by it

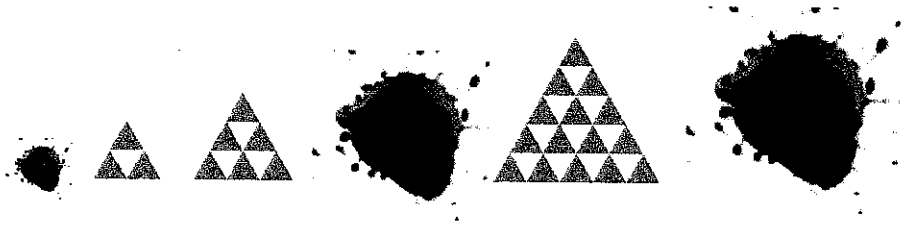
b) Consider the following figure



i) Build up an expression to find the **perimeter**

ii) if the perimeter is 70cm, find the value of x

(2) Shavini spilled out the ink on his writing book. The diagrams A, B, F and G are hidden.



A B C D E F

(i) Write the number of **shaded triangles** in figures **B, C, and E**

B = **C =** **E =**

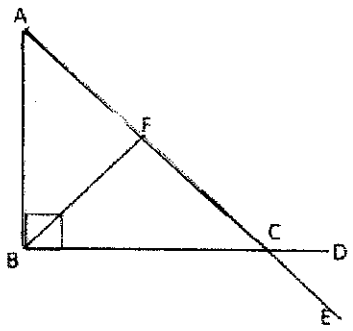
(ii) Write the number of shaded triangles in figures **A, D,** and **F**

A = **D =** **F =**

(iii) Write down the **special name** of this **number pattern**

(iv) Write down the **general term** for the above number pattern

(3) a) In the given diagram



i) What is the **complimentary** angle of $\hat{ABF}$

b) When consider the above a pair of **complimentary angles**

i) What is the common **edge**?

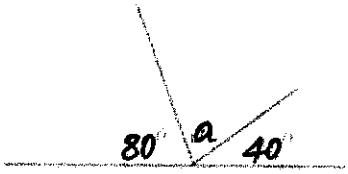
ii) What is the common **vertex**?

c) What is the **supplementary** angle of $\hat{ACB}$?

d) If $\hat{ACD} = 130^0$, find $\hat{DCE}$

e) Find the angles denoted by the English Alphabets **x, y** and a in the given diagrams below.

For y



For x

For a

(4) a) (i) Expand by removing the brackets **$3k(1 - 5k - 2k^2)$**

(ii) Factorize **$72x^2 - 9x + 3$**

(iii) Find the **H.C.F** of the algebraic terms **6ac, 12ab, 24abc**

b) (i) Express **441** as a **product of prime factors**

(ii) Hence find the **value** of $\sqrt{441}$

(iii) Write all the **digits in the unit place** of all the **perfect square**

(5) a) Simplify :

(i) $(+3) + (-5.3)$ =

(ii) $(-3) - (-5.3)$ =

(iii) $(-3) \times (-5.3)$ =

(iv) $(-1) - (-5) - (+3)$ =

(b) Fill in the blanks

(i) $\frac{(-10)}{\square} = \frac{\square}{(-2)} = (-5)$

(ii) $\frac{(-40)}{(+8) \times \square} = (-1)$

(6) a) Build up algebraic expressions for the statements given below.

(i) Multiply by **5** the number which '***x***' represents

(ii) Subtract **3** from **2 times** the number that represents ***'a'***.

(iii) Add **2** to **one third** of the number that '***p***' represents.

(b) (i) Simplify. $p + 3q - 2p + q - 3p$

(ii) Find the value of $x + 2y + 1$ when $x = -2$, $y = 3$

(iii) **Remove** the brackets and **simplify** $5(x - 2) - (x + 3)$

(iv) **Simplify** $10(a + 2b) - 3(a - 5b)$

Find the value when $a = 7$ and $b = 1$.

(7)

a) Fill in the blanks

(i) $15^3 = 3^3 \times \ldots^{\ldots}$ (ii) $5^k \times \ldots^k = 80^{\ldots}$

Simplify

(i) $b^2 \times (2b)^3 \times (-1)^3$ (ii) $(-1)^{207} + (+1)^{783}$

b) Simplify

(i) **115**kg **51**g − **65**kg **827**g (ii) **10**m **18**cm **X 5** (iii) **12** t **50** kg ÷ **5**

(8)

(i) Find the **general term** of the following sequences 2, 4, 6, 8, 10, ...

(ii) Write the **first three** terms of the sequence $5n - 3$

(iii) 1, 2, 3, 4, 5, 6, 7, 12, 18 Select the two numbers which are **not** a factor of 36.

(iv) Write $4\frac{2}{3}$ as an **improper** fraction.

(v) Fill in the blanks $64 = 2^{\ldots} = 4^{\ldots} = 8^{\ldots} = 64^{\ldots}$

(vi) Find the 25% of Rs. 80,000/=

(vii) Write $3X3X3XaXa$ in **index** form