

# Annual Evaluation 2017-18

## Mathematics

Standard 7

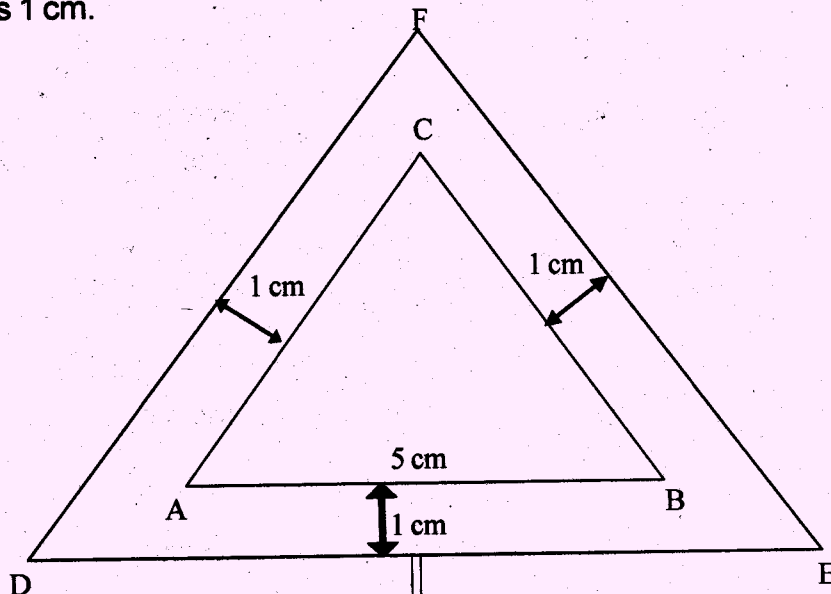
Time: 2 Hours.

**Instructions**

- 15 minutes cool off time is to be allotted to read and understand the questions.
- Answer any Six activities out of the given Eight.

**Activity 1**

Picture of a sign board is given below. Draw a similar sign board using the following measurements. The triangle ABC is an equilateral triangle of side 5 cm. Sides of triangle ABC is parallel to the sides of triangle DEF. Distance between the sides of two triangles is 1 cm.

**Activity 2**

The distance between A to B is 120 km. Sachin travelled from A and reached B at an average speed of 40 km/hr.

- a) Total time taken by Sachin to reach B?
- b) If Sachin takes only 2 hrs. to return from B to A, then what will be the average speed of Sachin?
- c) Find the average speed of Sachin for the total journey?

### Activity 3

The half yearly examination result analysis of Maths in STD VII of a UP School is given below. The number of students who scored each grade is noted in the table.

Grade	No. of students
A	20
B	10
C	5
D	3
E	2

- a) For drawing Pie chart what should be the measures of the angles which represent the students who scored 'A' grade. Find the angle measures of other grades.
- b) Draw a Pie chart of this.

### Activity 4

A merchant sold a table for Rs. 3000/-. If he gained a profit of 20% then,

- a) What is the selling price of the table?
- b) During the festival season, he increased the cost of the table by Rs. 1000/-. Then he sold it with a discount of 25%. What is the selling price of the table during the festival season?
- c) What is the percentage of profit or loss when the table is sold during the festival season?

## Activity 5

Fathima made a big square by joining two squares of sides 6 cm and 8 cm.

- What is the area of the big square? What is the measure of its side?
- Next day her friend Renjini cut two small squares and made a big square of side 13 cm. If the side of one of the squares she used is 5 cm., then find the side of the other square.

## Activity 6

The given table shows the exponents of 2.

$2^1 = 2$	$2^6 = 64$	$2^{11} = 2048$
$2^2 = 4$	$2^7 = 128$	$2^{12} = 4096$
$2^3 = 8$	$2^8 = 256$	$2^{13} = 8192$
$2^4 = 16$	$2^9 = 512$	$2^{14} = 16384$
$2^5 = 32$	$2^{10} = 1024$	$2^{15} = 32768$

Even numbers can be expressed as the sum of the exponents of 2.

Eg. :  $10 = 8 + 2 = 2^3 + 2^1$

$$14 = 8 + 4 + 2 = 2^3 + 2^2 + 2^1$$

a) As in the above example, write the even numbers as the sum of the exponents of 2.

1)  $100 = \dots\dots\dots$

2)  $200 = \dots\dots\dots$

b) Find the answers of the following by using the table of exponents of 2.

1)  $256 \times 32$

2)  $\frac{128 \times 512}{1024}$

c) Which among the following is the odd number? why?

$$2^{m+1}, 2^{m-1}, 2^m + 1, 2 \times 2^m$$

## Activity 7

The lowest temperature recorded in Kargil during this year is on 7th January. The difference in temperature on that day for every 3 hours is as follows.

Temperature at 6 am =  $-12^{\circ}\text{C}$

Time	Difference in Temperature	Accurate Temperature (Degree Celcius)
6 am		-12
9 am	Increased by $5^{\circ}\text{C}$	$-12 + 5 = \dots\dots\dots$
12 Noon	Again $8^{\circ}\text{C}$ increased	$\dots\dots\dots$
3 pm	decreased by $5^{\circ}\text{C}$	$\dots\dots\dots$
6 pm	Again $9^{\circ}\text{C}$ decreased	$\dots\dots\dots$

- Complete the above table.
- Temperature at 6 pm is higher or lower compared to the temperature at 6 am?  
By how much degree celcius?

## Activity 8

Sum of the three consecutive odd numbers are given below.

$$3 + 5 + 7 = 15$$

$$5 + 7 + 9 = 21$$

$$7 + 9 + 11 = 27$$

$\dots\dots\dots$   
 $\dots\dots\dots$

- Complete the pattern by adding two more rows.
- What is the relation between the answer and the middle number of each row.  
Explain in your own words?
- If the first number is 'm' then write the next two numbers?
- If the middle number is 'p', then find the first and third numbers?
- Using the algebraic expression, write the relationship between the sum of the 3 numbers and the middle number.