ALTERNATE ACADEMIC CALENDER FOR THE MONTH OF FEBRUARY

CLASS:9TH **PROBABILITY** **MATHEMATICS**

Advisory activities that can be carried out on Probability.

Sl.no	Month week	Expected learning competencies	Learning activities	Evaluation
1	1ST Week	Introduction for Probability. Out come of an experiment is known as an event.	By discussing some of the probability events in day-to-day life and discussing over the formula of probability. https://youtu.be/Q7kAYyKtero	List of events
		15.2 Probability-A Theoretical Approach.	Let us learn meaning experimental approach with some examples. https://youtu.be/m8ZEU-jNTJ4	Activity sheet-1 & 2
2	2nd Week	Part 1- Chapters revision	1.Number Systems 2.Introduction to Euclid's Geometry. 3.Lines and Angles. After revision of these three chapters conducting a Unit Test.	Question Papers
			4.Polynomials. 5.Triangles	
			6.Constructions 7.Quadrilaterals	

PROBABILITY

Probability: Probability means the extent to which an event is likely to occur.

Radom experiment: An experiment, whose outcome is from the events that aren completely know but exact outcome is not known

 Example: 1) Any game   2) tossing a coin   3) Examination result

4)Throwing a disc 5) Picking a colour marble from a box

The Result set (Sample Space): Set of all possible outcomes of a statistical experiment. It is denoted by S

Sl.no	Radom experiment	Sample Space
1	Any game	S= {loose, win}
2	Coin tossed	S= {head, tail}
3	Exam result	S= {Pass, fail}
4	Throwing a die	S= {1,2,3,4,5,6}
5	Picking a marble from a box	S= {red, blue, green}

An Event: An outcome or defines collection of outcomes of a random experiment, it is denoted by E.

Probability of an event=$\dfrac{Number\ of\ trials\ in\ which\ the\ event\ happens}{Total\ number\ of\ trials}$

$$P(E) = \frac{n(E)}{n(S)}$$

PROBABILITY
AVTIVITY SHEET-1

1.What is probability?

2. What is experimental or empirical probabilities?

3.What is the result set or the sample space?

4.What is an event?

5.Write the experimental probabilities when a coin is tossed.

6.Write the experimental probabilities when a die is thrown.

7Formula to find the event of a probability.

8.Write experimental probability of the exam result.

PROBABILITY

AVTIVITY SHEET-2

EXAMPLE: A die is thrown 1000 times with the frequencies for the outcomes 1,2,3,4,5 and 6 as given in the following table. Find the probability of getting each outcome.

Outcome	1	2	3	4	5	6
Frequency	179	150	157	149	175	190

Solution: Let E_1 denote the events of getting the outcome where i- 1,2,3,4,5,6.

Then Probability of the outcome1=P(E_1) = $\dfrac{Frequency\ of\ 1}{Tatal\ number\ of\ times\ the\ die\ is\ thrown}$

$$P(E_1) = \frac{179}{1000} = 0.179$$

Similarly, $P(E_2) = \frac{150}{1000} = 0.15$, $P(E_3) = \frac{157}{01000} = 0.157,$

$$P(E_4) = \frac{149}{1000} = 0.149 \text{ , } P(E_5) = \frac{175}{1000} = 0.175$$

and $\quad P(E_6) = \frac{190}{1000} = 0.19$

Therefore, $P(E_1) + P(E_2) + P(E_3) + P(E_4) + P(E_5) + P(E_6) = 1$

DO IT YOURSELF:

1) A tyre manufacturing company kept a record of the distance covered before a tyre needed to be replaced. The table shows the results of 1000 cases.

Distance (in km)	Less than 4000	4000 to 9000	9001 to 14000	More than 14000
Frequency	20	210	325	445

If you buy a tyre of this company, what is the probability that:

(i) it will need to be replaced before it has covered 4000km?

(ii) it will last more than 9000 km?

(iii) it will need to be replaced after it has covered somewhere between 4000km and 14000 km?

1) Express 0.47 in $\frac{p}{q}$ form.

2) Find the product of $6\sqrt{5} \times 2\sqrt{5}$ _____ .

3) Represent $\sqrt{2}$ on a number line.

4) Rationalise the denominator and simplify it $\dfrac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$

5) Express $\overline{0.3}$ in $\frac{p}{q}$ form.

6) Find the decimal expansion of $\frac{1}{7}$

INTRODUCTION TO EUCLID'S GEOMETRY
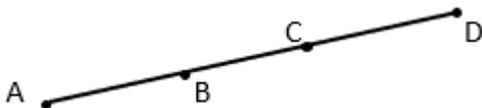
UNIT TEST

1) If a=b then 2a= _____

2) A line is _____

3) What are Axioms?

4) What are Postulates?

5)Write down any two axioms?

6)Write down any two Postulates?

7) In the figure if AB=BD the prove that AB=CD.

LINES AND ANGLES

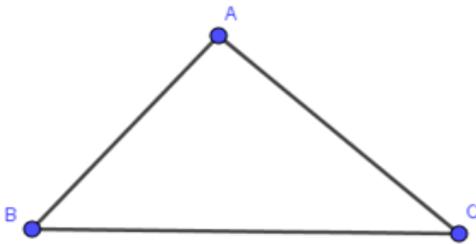## UNIT TEST
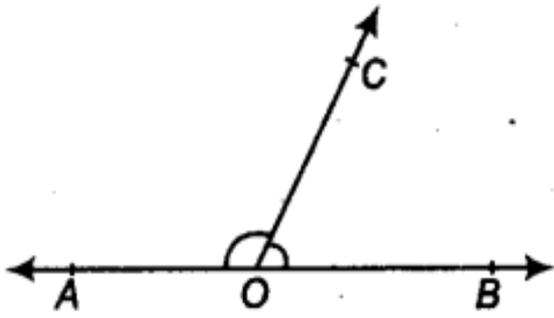
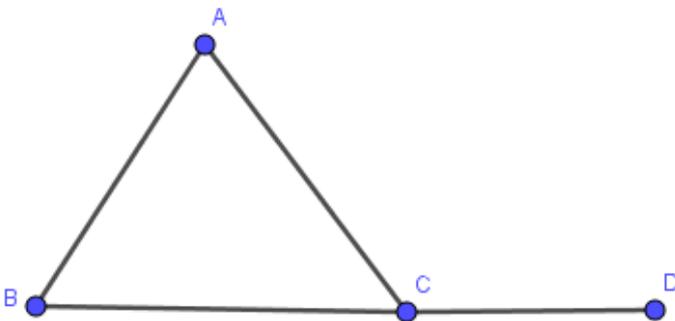|	
	In the figure ∠BOC = 50° then find ∠AOC
	In the figure if ∠AOD = 110° then find ∠BOC and ∠BOD
	In the figure if ∠ABC = 55° and ∠ACB = 70° then find ∠BAC
	In the figure if ∠ABC = 60° and ∠BAC = 50° then find ∠ACB
	From the figure write a pair of given angles 1) Corresponding angles 2)Alternate angles 3) Interior angles
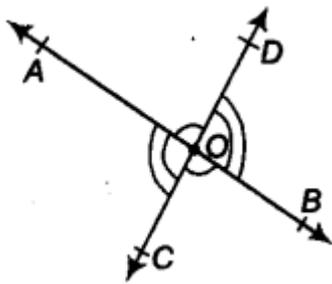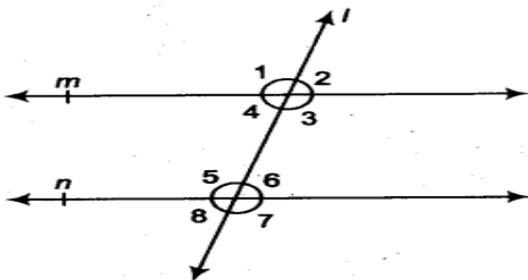
POLYNOMIALS

UNIT TEST

1. P(x) = 2x+3 is _____ type of polynomial.

2. P(x)=x^3+3x^2+2x+5 degree of the equation _____

3. If P(x)=5x+3 then find value of P(2) .

4. Find if the roots of the equation P(x)=x^2-1 are -1 and +1.

5. Divide 3x^4-4x^3-3x-1 from (x-1)

6. Find the remainder when x^4+x^3-2x^2+x+1 is divided by (x-1) without actual division (using remainder theorem).

7. Factorise using suitable identities: $25a^2 + 20a + 4$

8. Write expanded form of $(x + y + z)^2$

9. Expand $(a - b)^3$

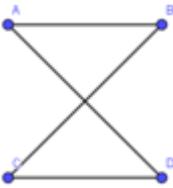10. Find the value of $(99)^3$ using suitable identities.
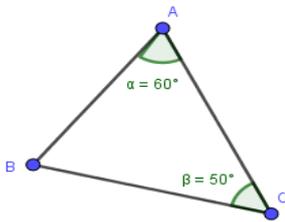
TRIANGLES

UNIT TEST

1. Prove S.A.S Congruence rule.
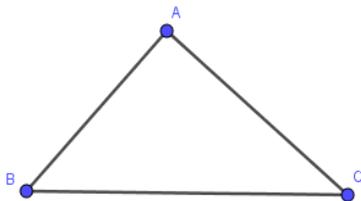
2. RHS congruence rule.

3. In the figure if AB∥CD , AO = OD then prove that △AOB ≅ △COD.

4.

	4) In the figure identify the biggest and smallest side.
	5) In the figure AB = 4cm, BC = 6cm and AC = 8cm write the greatest and smallest angle.

6. Prove that "the angles opposite to equal sides of an isosceles triangle are equal".

CONSTRUCTIONS

UNIT TEST

1) Construct an angle of 60^0 at the initial point of a given ray and bisect it.	2) Construct a perpendicular bisector of line segment 6cm.

3.Construct a triangle ABC in which BC=7cm $\angle ABC$=70^0 and AB+AC=11 cm

4) Construct a triangle ABC in which BC=8cm, $\angle ABC=45^0$ and AB-AC=3cm.

5) Construct a triangle with its perimeter 12cm and base angles 50^0 and 60^0.

QUADRILATERALS

UNIT TEST

1. What are Quadrilaterals?

2. Mention the properties of quadrilaterals?

3. Mention the types of quadrilaterals for the following.

Rectangle	Rhombus	Trapizium

4. Write the properties of the given qudrilaterals.

Square
Parallelogram

5. Prove that the diagonals of a parallelogram bisect each other.

6. The angles of quadrilaterals are in the ratio 3:5:9:13. Find all the angles of the quadrilaterals.

7. Prove that "The line drawn through the mid-point of one side of a triangle,parallel to another side an bisect the third side".