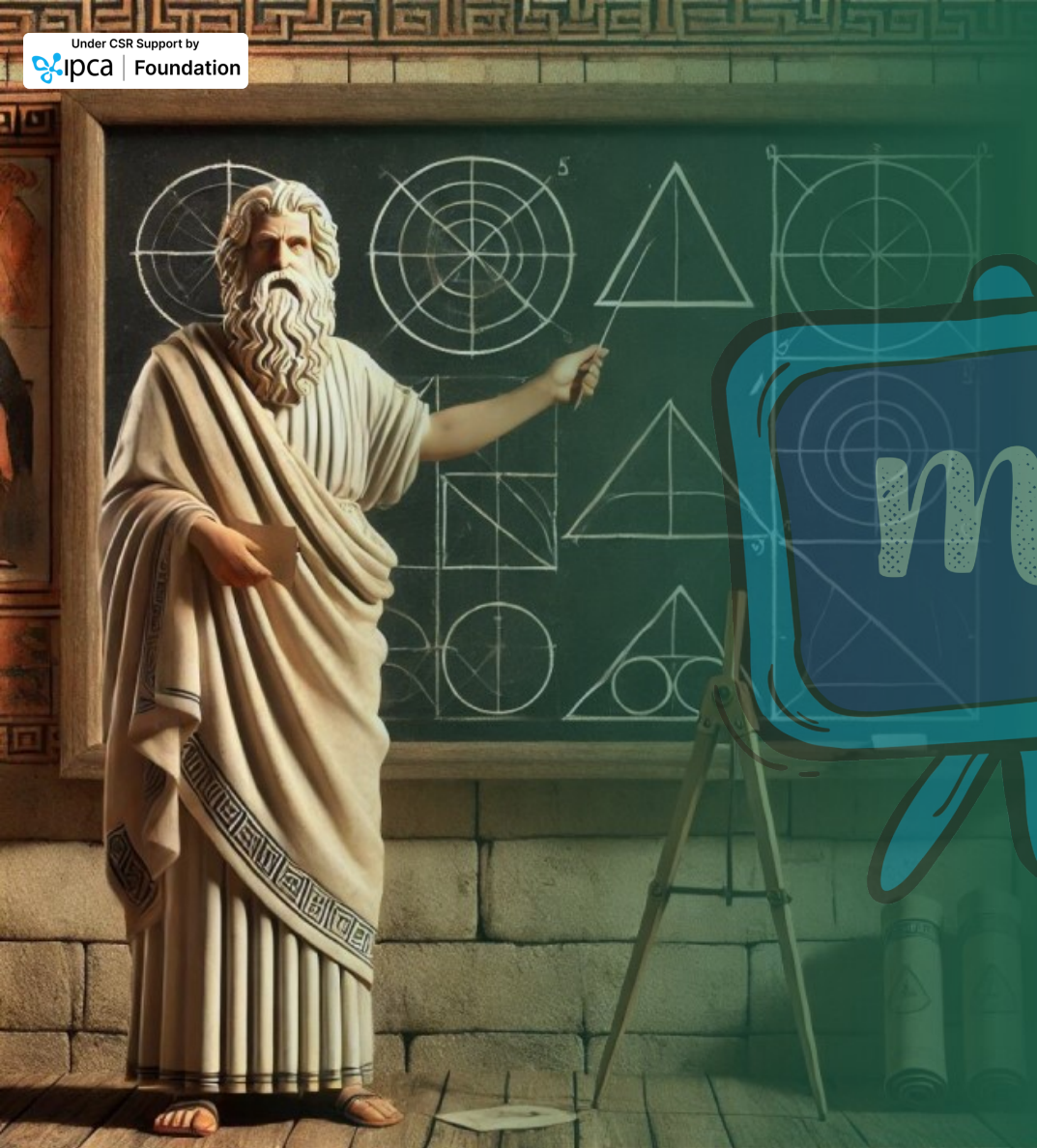
Under CSR Support by
ipca | Foundation

missiongyan
LET'S LEARN TOGETHER



Class – 9

MATHEMATICS

Chapter – 5

Introduction to Euclid's Geometry

Part – 2

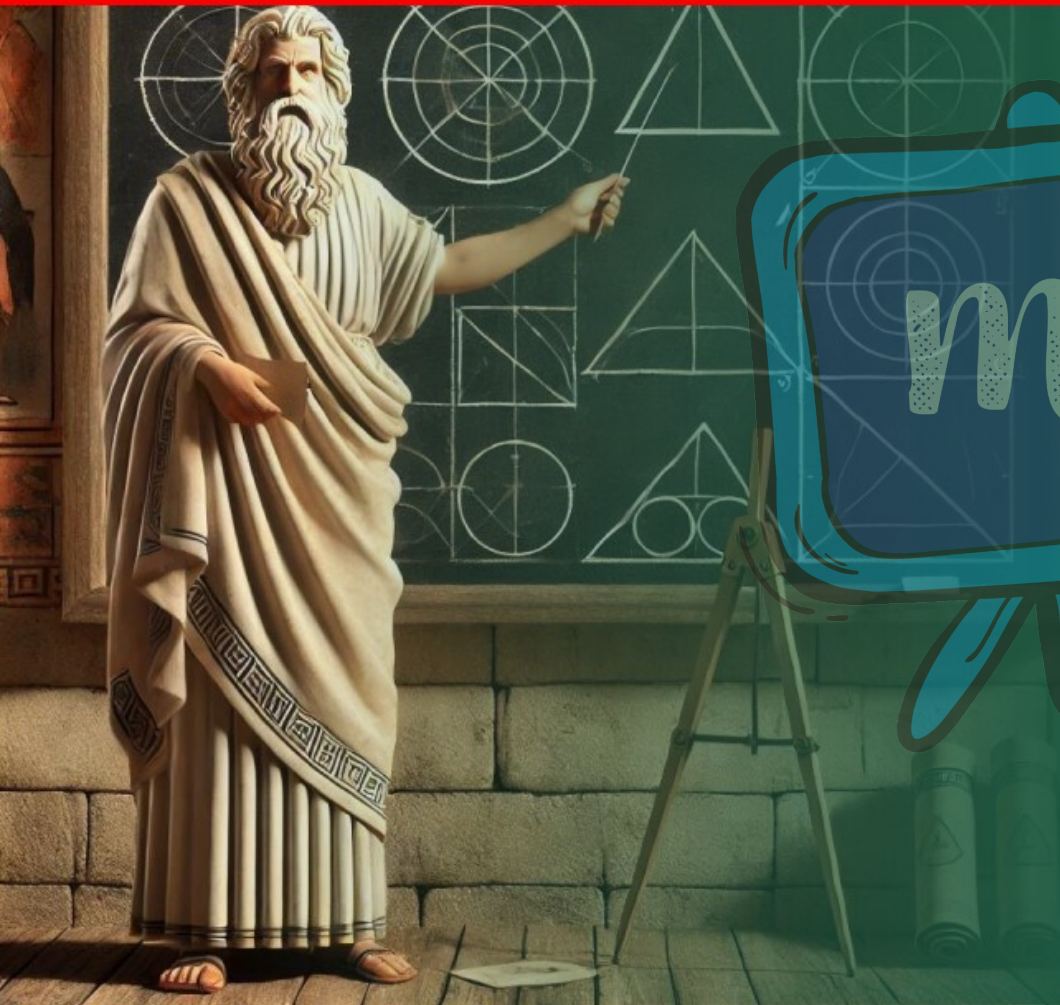
Euclid's postulates

Vikas Saini

Under CSR Support by ipca | Foundation

OVERVIEW

missiongyan LET'S LEARN TOGETHER



1. Introduction to Euclid's Geometry
2. Euclid's definitions and axioms
3. Euclid's postulates

Under CSR Support by ipca | Foundation

missiongyan LET'S LEARN TOGETHER

EUCLID'S POSTULATES

Euclid presented five postulates which are as follows-

Postulate : 1

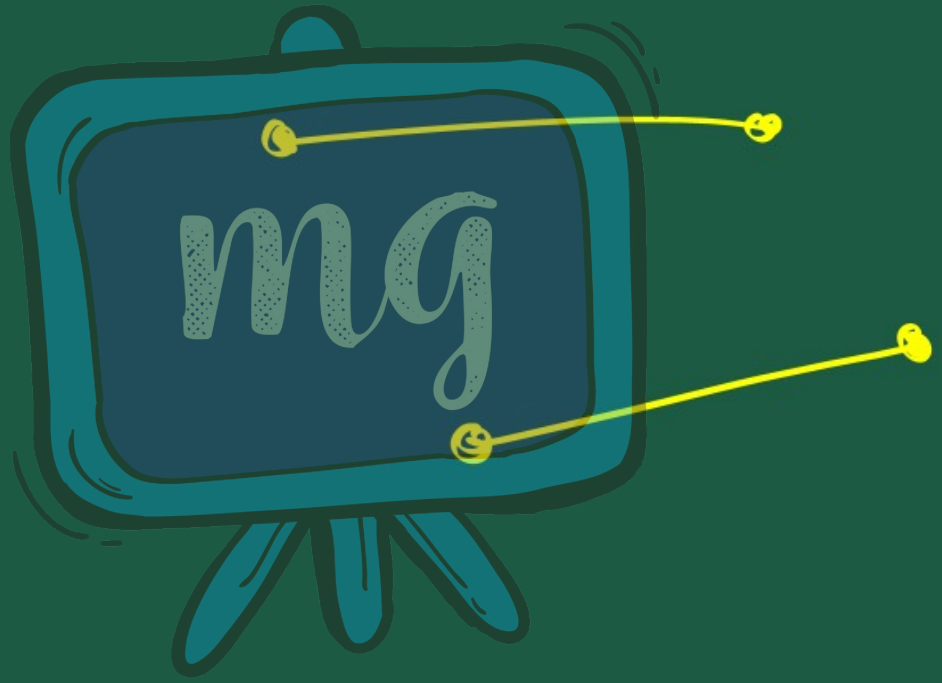
A straight line may be drawn from any one point to any other point

Postulate : 1.1

Given two distinct points, there is a unique line that passes through them.

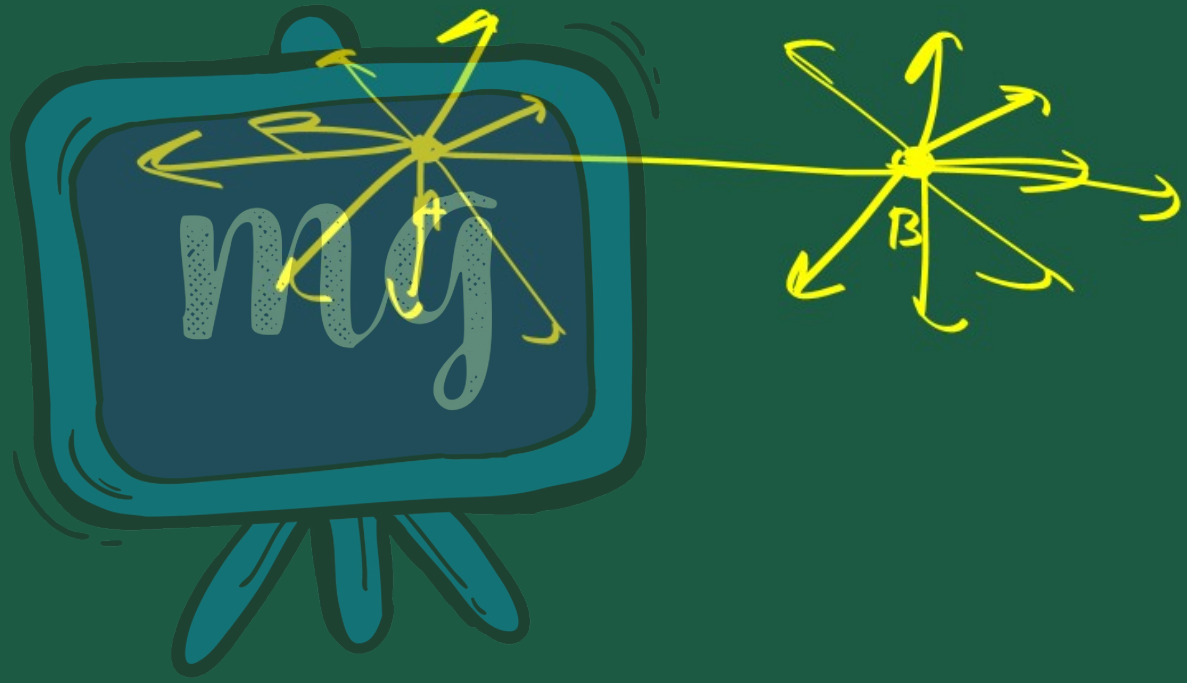
Under CSR Support by
ipca | Foundation

missiongyan
LET'S LEARN TOGETHER



Under CSR Support by
ipca | Foundation

missiongyan
LET'S LEARN TOGETHER

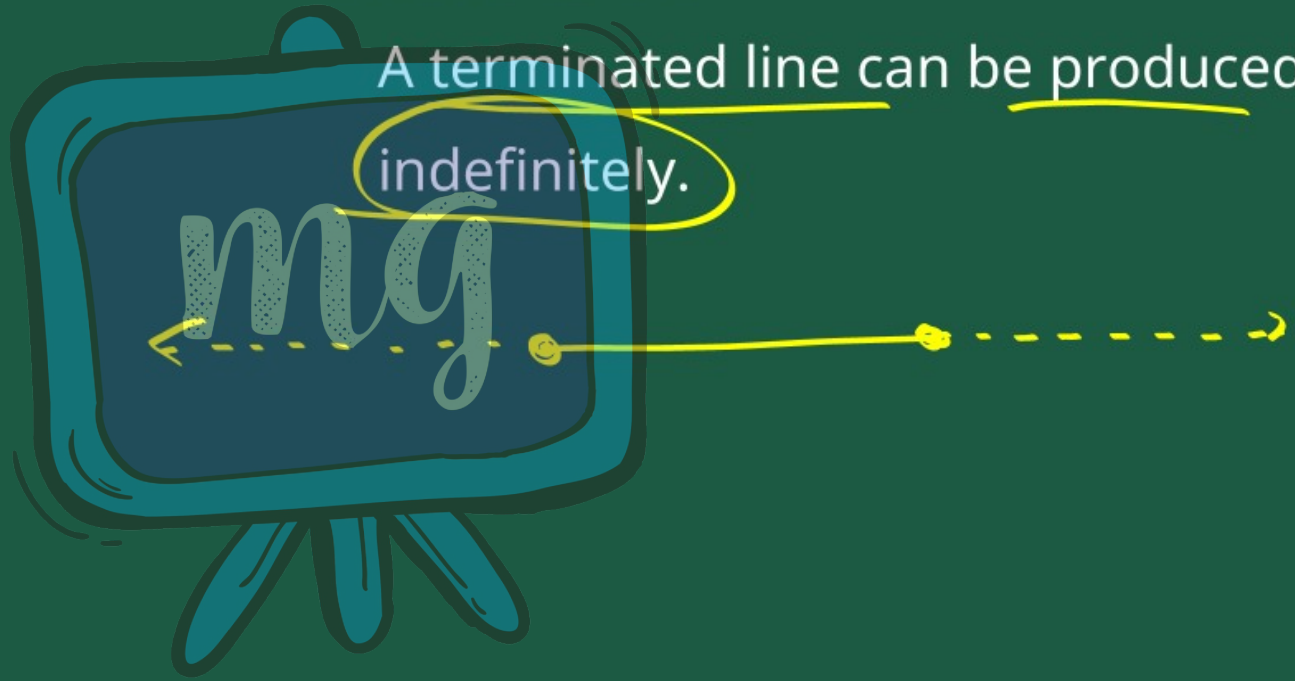


Under CSR Support by ipca | Foundation

missiongyan LET'S LEARN TOGETHER

Postulate : 2

A terminated line can be produced indefinitely.

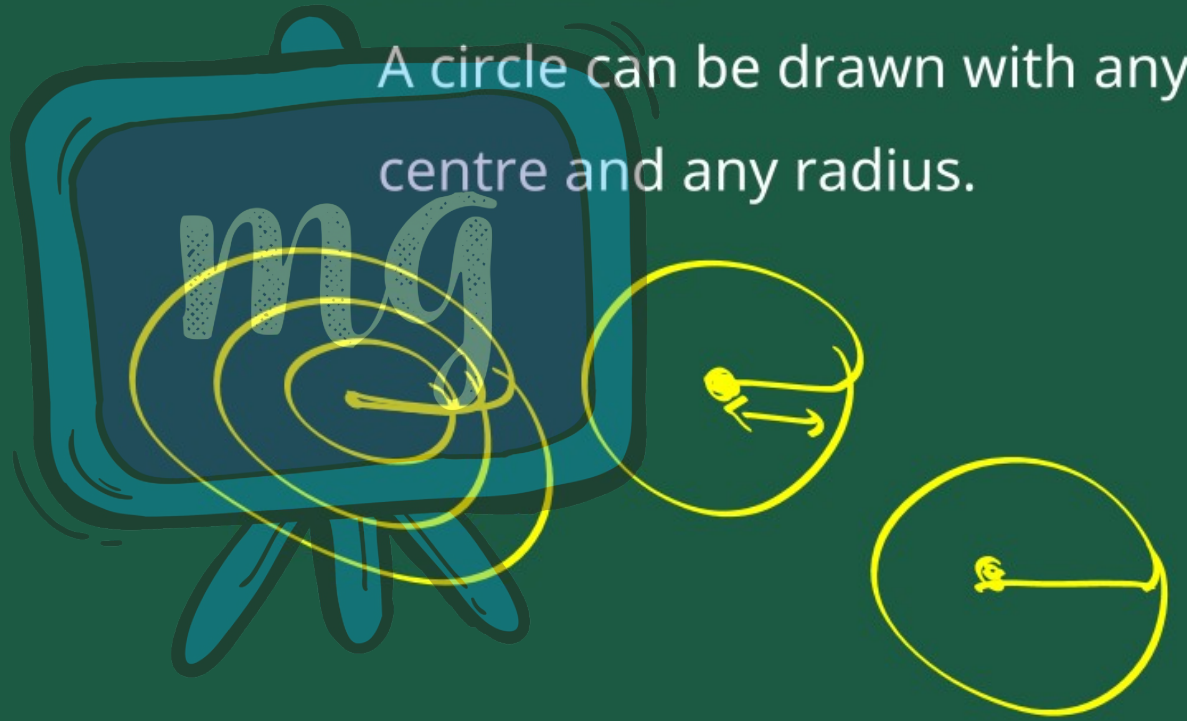


Under CSR Support by ipca | Foundation

missiongyan LET'S LEARN TOGETHER

Postulate : 3

A circle can be drawn with any centre and any radius.

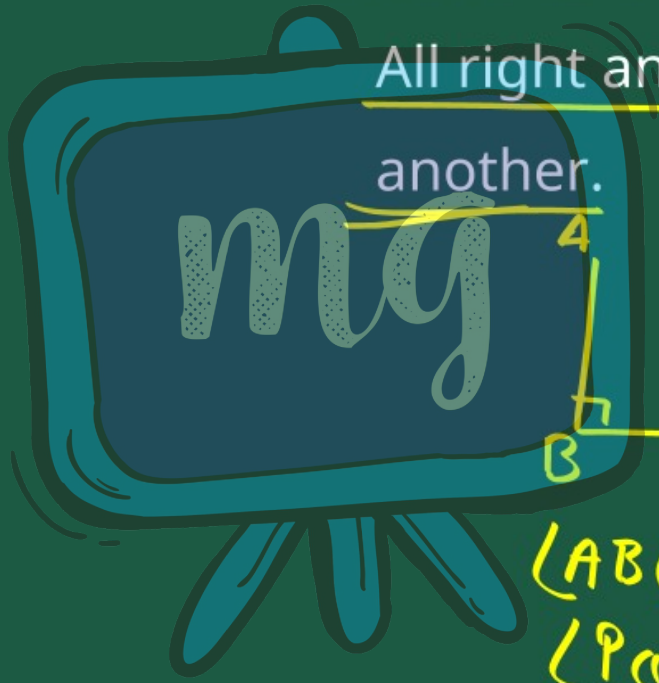


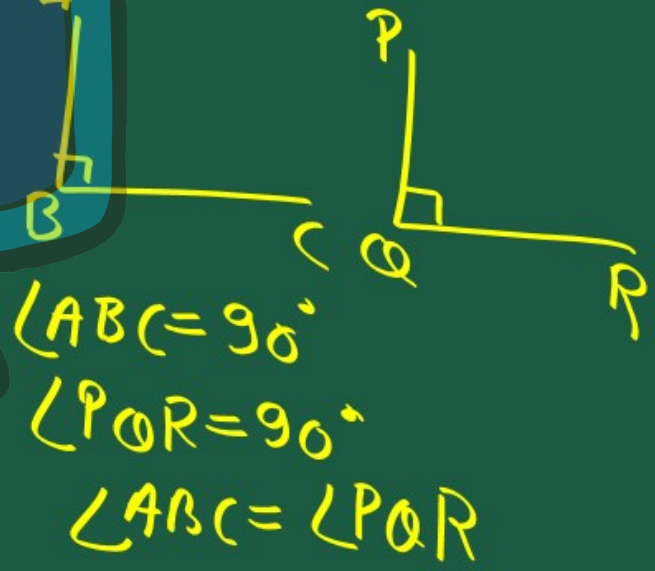
Under CSR Support by
ipca | Foundation

missiongyan
LET'S LEARN TOGETHER

Postulate : 4

All right angles are equal to one another.





Under CSR Support by ipca | Foundation

missiongyan LET'S LEARN TOGETHER

Postulate : 5

If a straight line falling on two straight lines makes the interior angles on the same side of it taken together less than two right angles, then the two straight lines, if produced indefinitely, meet on that side on which the sum of angles is less than two right angles.

Under CSR Support by ipca | Foundation

missiongyan LET'S LEARN TOGETHER

Note

A system of some axioms is called consistent if it is impossible to construct a statement from these axioms which is contradictory to any other axiom or to any statement proved earlier.

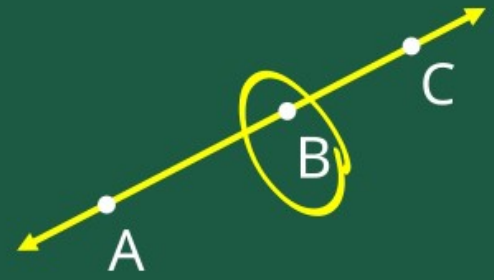
Therefore, if a system of axioms is given, it is necessary to ensure that this system is non-contradictory.

Under CSR Support by ipca | Foundation

missiongyan LET'S LEARN TOGETHER

Example : 1

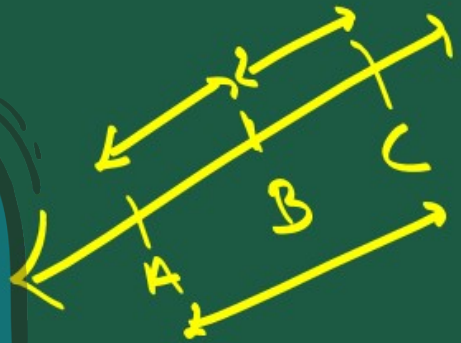
If A, B and C are three points on a line, and B lies between A and C, then prove that AB + BC = AC.



Under CSR Support by
ipca | Foundation

missiongyan
LET'S LEARN TOGETHER

$AB + BC = AC$



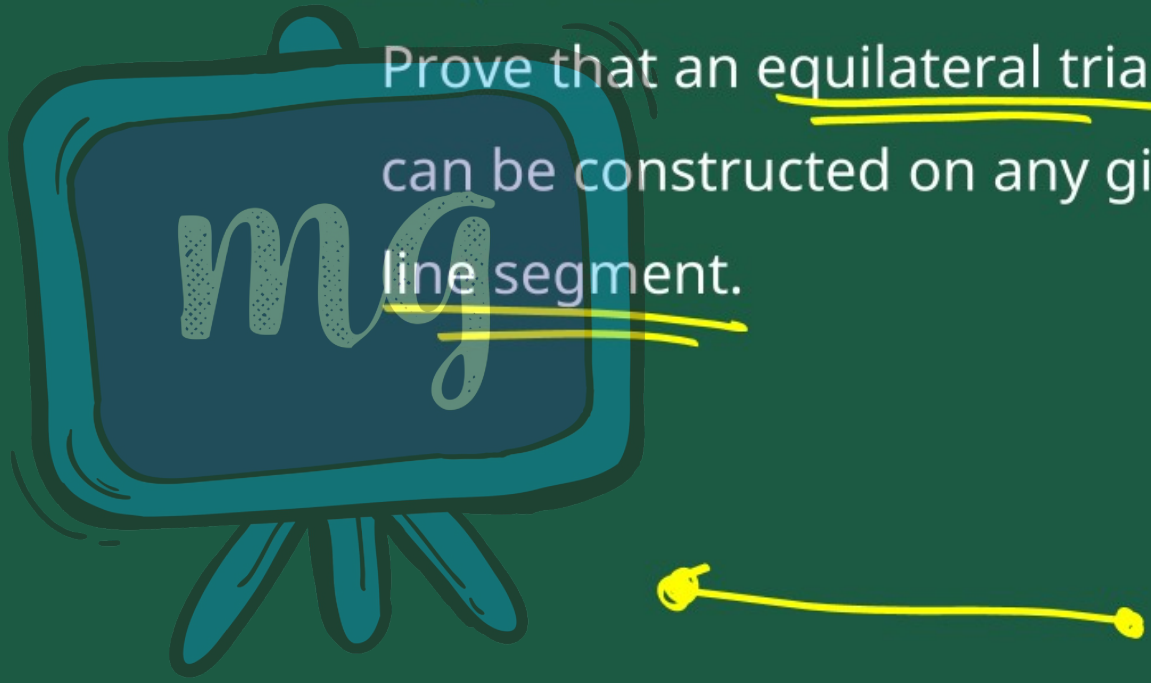
Things that are Coincide to Each other than they are equal to Each Other

Under CSR Support by ipca | Foundation

missiongyan LET'S LEARN TOGETHER

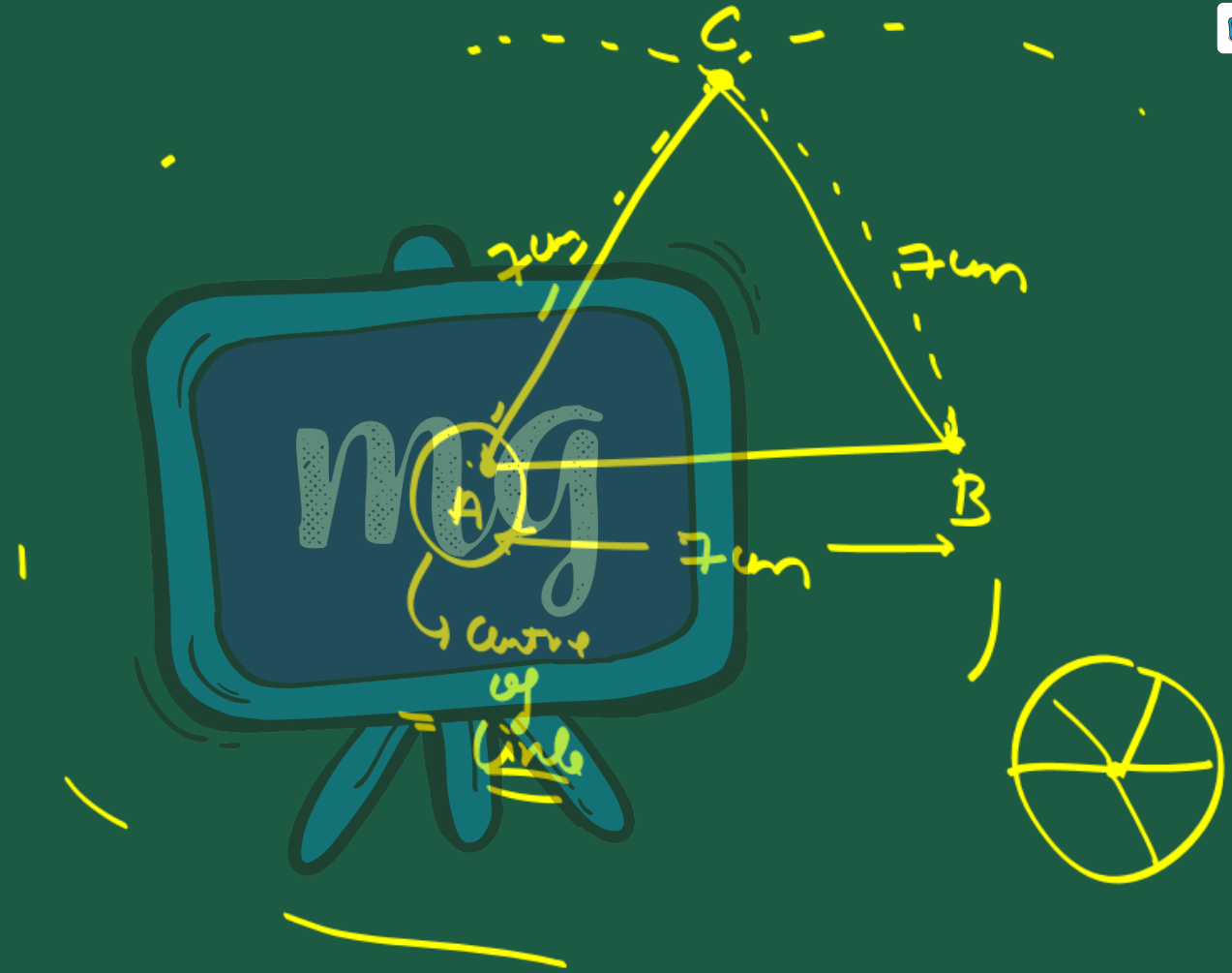
Example : 2

Prove that an equilateral triangle can be constructed on any given line segment.



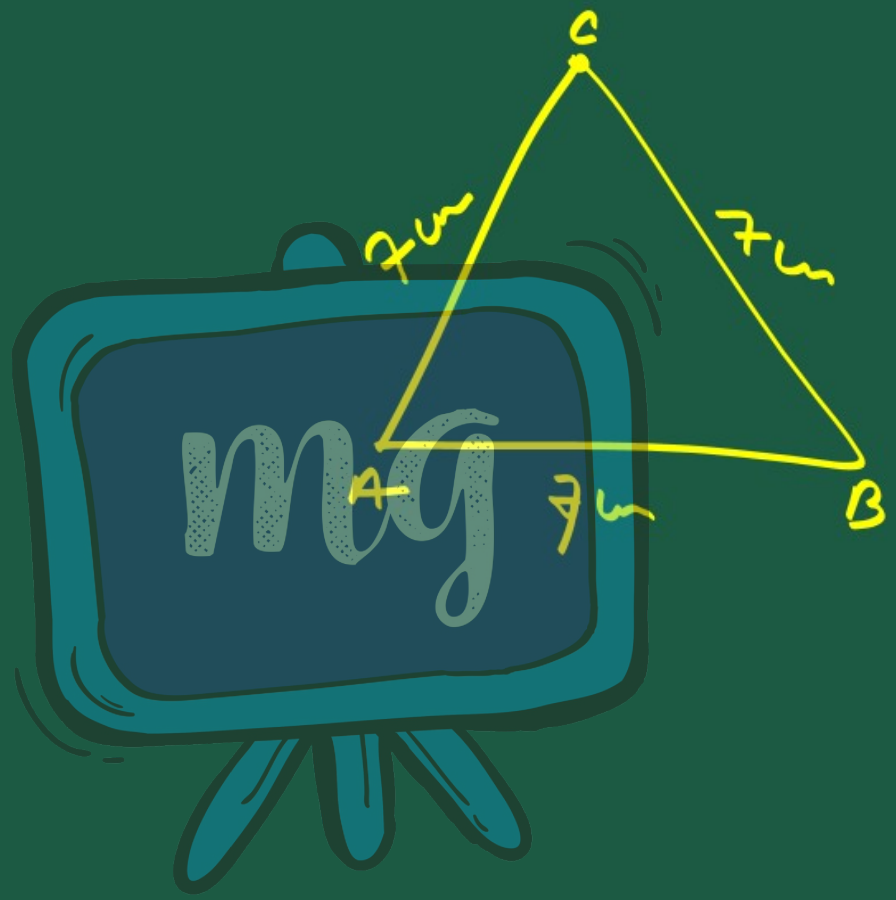
Under CSR Support by
ipca | Foundation

missiongyan
LET'S LEARN TOGETHER



Under CSR Support by
ipca | Foundation

missiongyan
LET'S LEARN TOGETHER

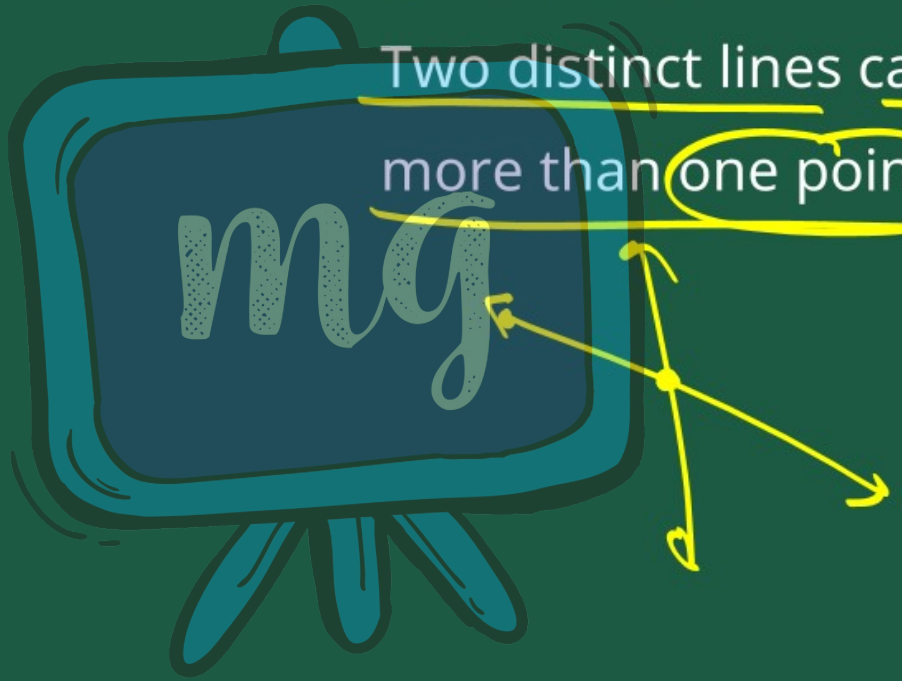


Under CSR Support by ipca | Foundation

missiongyan LET'S LEARN TOGETHER

Theorem : 5.1

Two distinct lines cannot have more than one point in common.

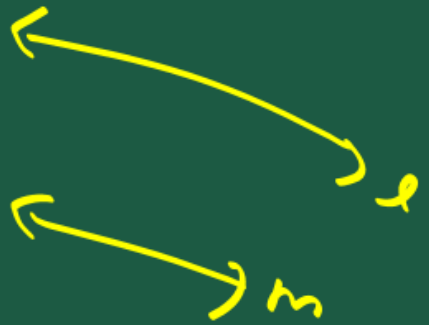


Under CSR Support by
ipca | Foundation

missiongyan
LET'S LEARN TOGETHER

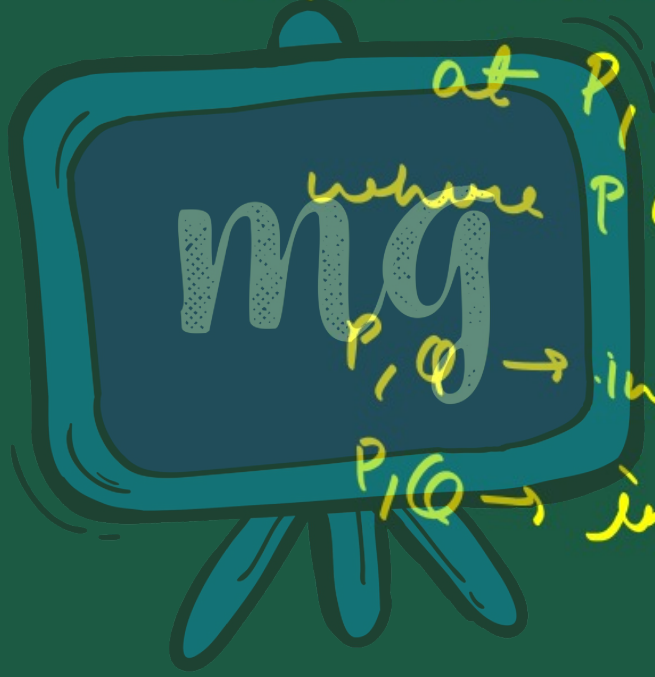
l , m are two lines





Under CSR Support by ipca | Foundation

missiongyan LET'S LEARN TOGETHER



l, m are meet each other at P, Q.

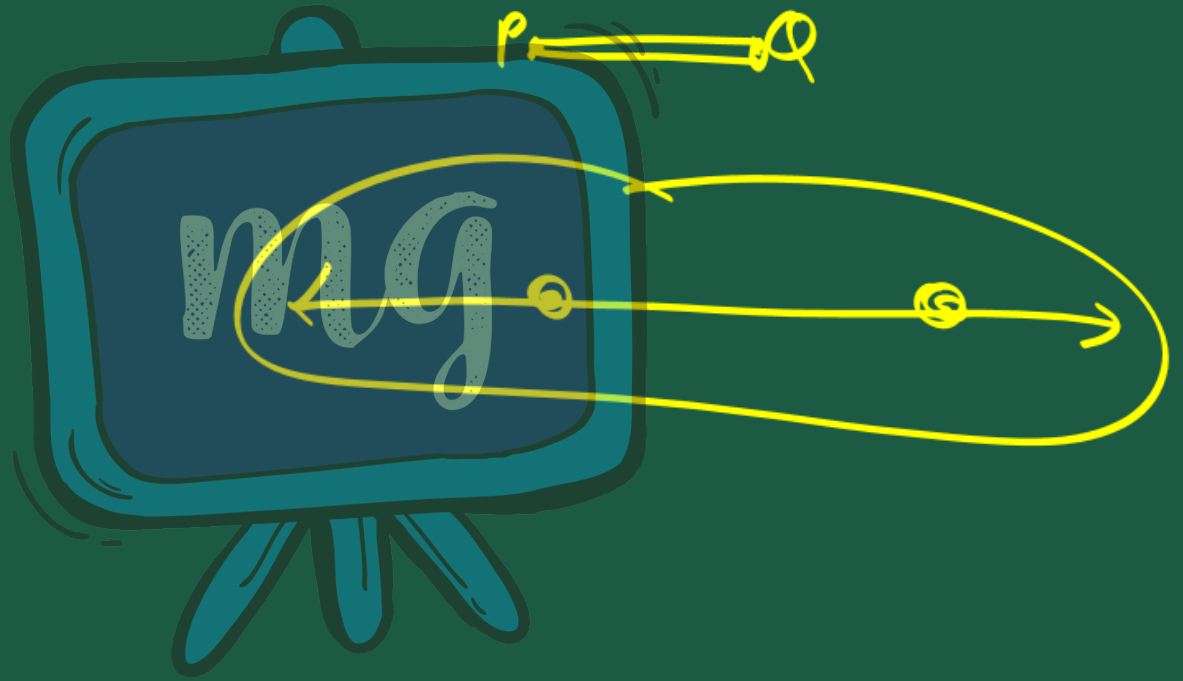
where P or Q are distinct Points

$P, Q \rightarrow$ inside line l

$P, Q \rightarrow$ inside line m

Under CSR Support by
ipca | Foundation

missiongyan
LET'S LEARN TOGETHER



Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

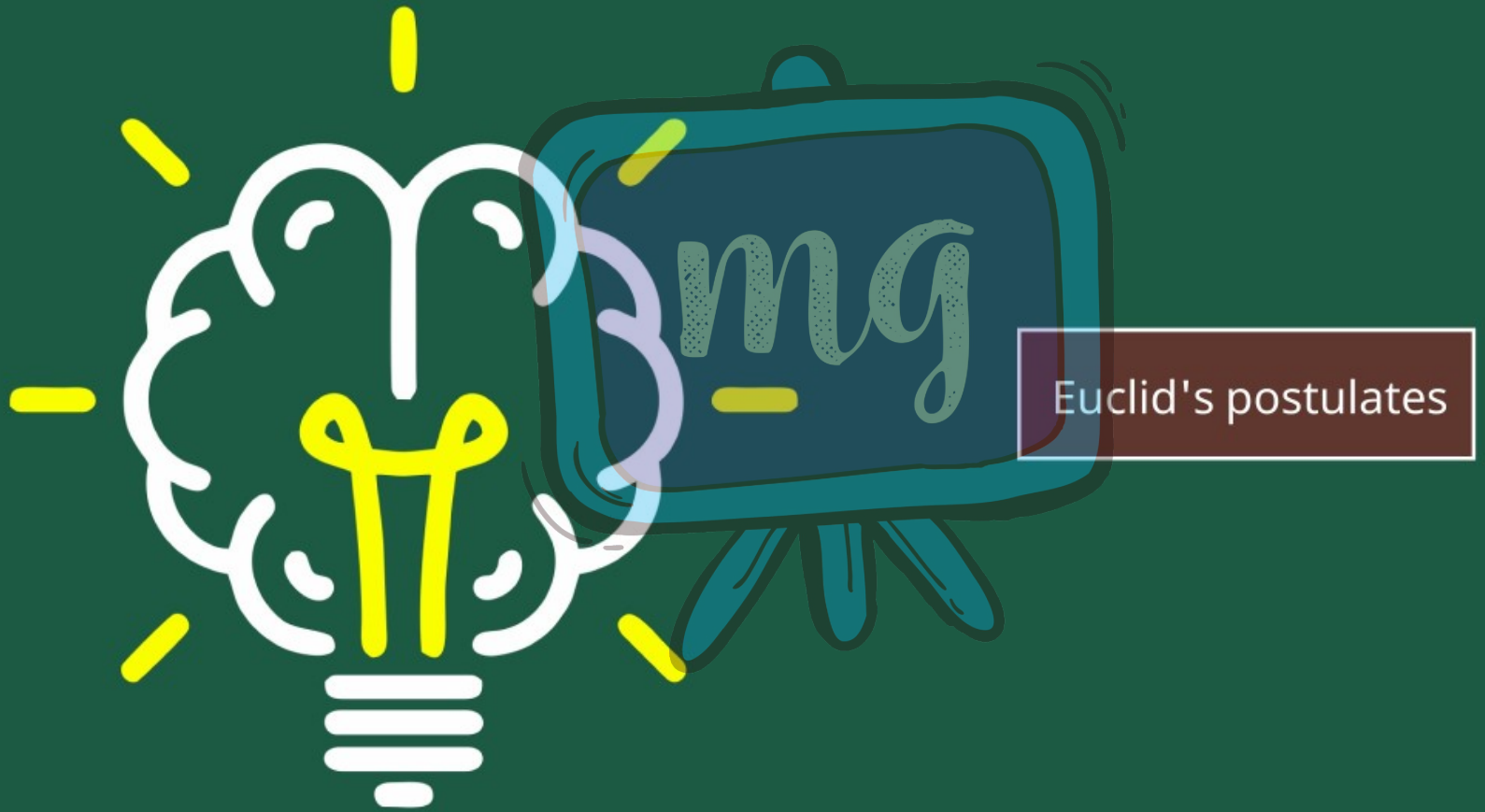


Two distinct lines
btw only one
common
point.

Under CSR Support by ipca | Foundation

LEARNING OUTCOME

missiongyan LET'S LEARN TOGETHER



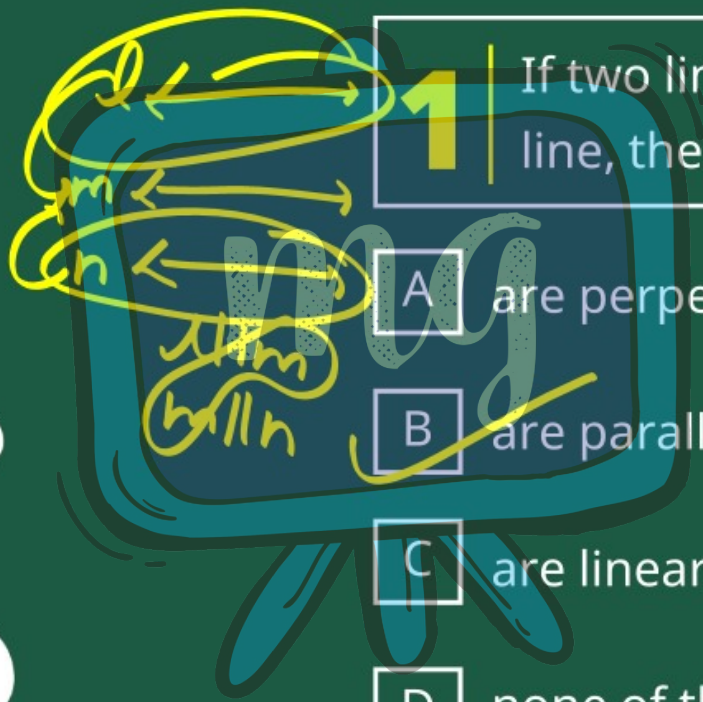
Euclid's postulates

Under CSR Support by ipca | Foundation

ASSESSMENT

missiongyan LET'S LEARN TOGETHER





1 If two lines are parallel to a third line, then they –

A are perpendicular to each other

B are parallel to each other

C are linear

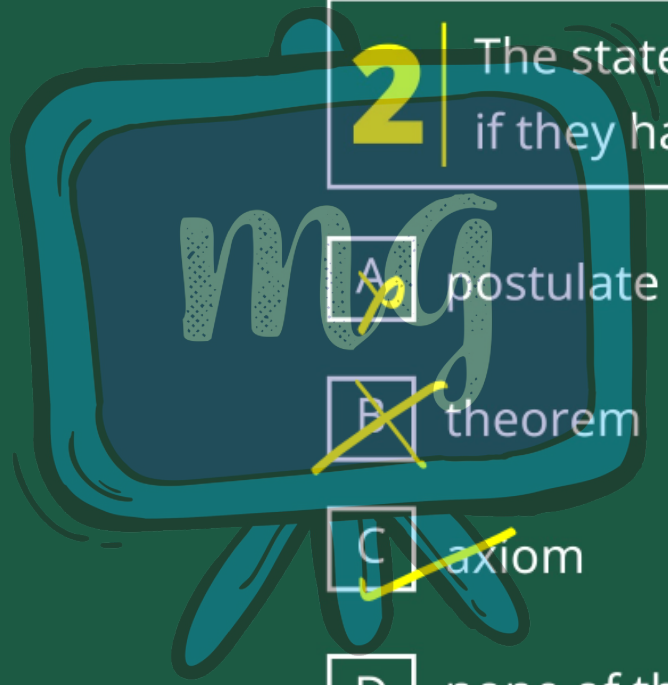
D none of these

Under CSR Support by ipca | Foundation

ASSESSMENT

missiongyan LET'S LEARN TOGETHER





2 The statement "two lines are parallel if they have no common points" is a:

A postulate

B theorem

C axiom

D none of these

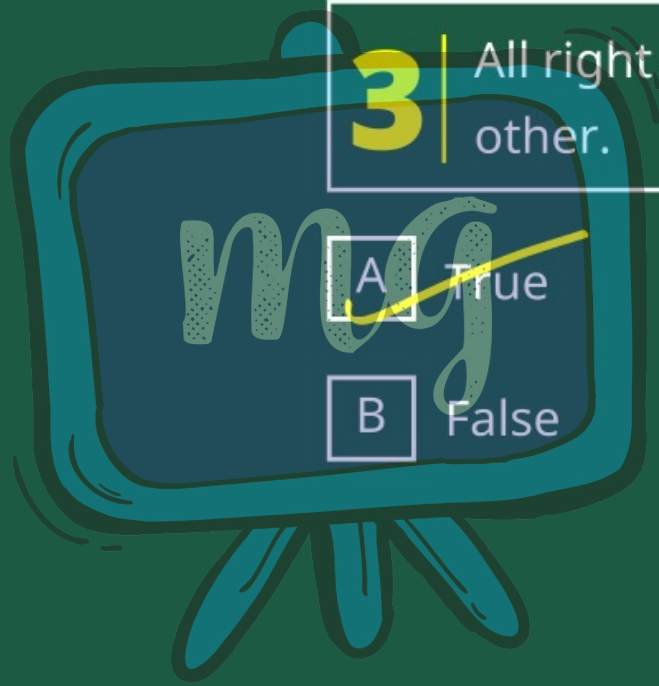


Under CSR Support by ipca | Foundation

ASSESSMENT

missiongyan LET'S LEARN TOGETHER





3 | All right angles are equal to each other.

A True

B False