

Teaching Aid for Teachers

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Aim

Understand teacher's activities of teaching in a school and problems faced during the entire course of action of teaching and learning in the present classroom-teaching-scenario.

Developing a tool for teachers which runs on computer to help them in teaching.

SCOPE

Help a teachers teaching with ease.

It does not aim at changing the existing education system.

The entire procedure of teaching and learning was concentrated on classroom scenario, is Maharashtra State board, class 10th, prototyped (for geometry).

Conceptualize a tool that helps teacher to teach in the present flow of classroom teaching.

Data Collection:

Shikav project

The project consist of concepts converted into computer application.

Schools and Computers:

The initial part of the study focused about educational facts relating to schools and teaching with new media.

Finding out difficult topics.

Teaching and learning in schools:

How teaching happens , how learning happens, different activities of classroom teaching , different styles of teaching.

Understanding teaching and learning with geometry in focus.

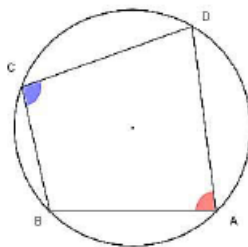
Finding out existing problems related to teaching and learning.

Existing CD's:

The existing CD's that are available in the market are highly text base, same as text book and none of them look into classroom teaching.

Theorem: The sum of the opposite angles of a cyclic quadrilateral is equal to 180° .

Given: ABCD is a cyclic quadrilateral.



Theorem says:

red angle + blue angle = 180° .

Shikav:

Ongoing project in the computer science department of IIT Bombay. The project named 'Shikav' carried out by Prof. Ranade, looks into the area of teaching by using computers. The project consist of geometry concepts, science concepts etc, converted into computer applications.

Theorem: The sum of the opposite angles of a cyclic quadrilateral is equal to 180° .

Given: ABCD is a cyclic quadrilateral.

To prove that: $m\angle A + m\angle C = 180^\circ$
and $m\angle B + m\angle D = 180^\circ$

Proof: Angle $\angle BAD$ is an inscribed angle of arc BCD.
Arc BCD is an intercepted arc of angle $\angle BAD$.

$\therefore m\angle BAD = \frac{1}{2} m(\text{arc BCD})$ (1) (inscribed angle theorem)

Similarly, Arc BAD is an intercepted arc of angle $\angle BCD$.

$\therefore m\angle BCD = \frac{1}{2} m(\text{arc BAD})$ (2) (inscribed angle theorem)

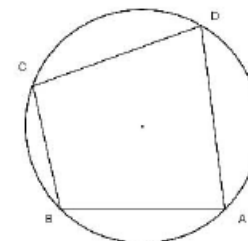
$\therefore$ From 1 and 2 we have

$$\begin{aligned} m\angle BAD + m\angle BCD &= \frac{1}{2} [m(\text{arc BCD}) + m(\text{arc BAD})] \\ &= \frac{1}{2} \times 360^\circ \quad (\text{Arc BCD} + \text{Arc BAD} = \text{complete circle}) \\ &= 180^\circ \end{aligned}$$

i.e. $m\angle A + m\angle C = 180^\circ$

Similarly we can prove that $m\angle B + m\angle D = 180^\circ$

Done!



$$\angle BCD + \angle BAD = 97.5 + 82.5 = 180$$

$$\angle ABC + \angle ADC = 102.5 + 77.5 = 180$$

Schools and Computers:

The initial part of the study focused about educational facts relating to schools and teaching with new media.

Visited 10-12 schools.

The data collected included:

Computers**Teaching and learning**

Computers:

Almost all the schools have introduced computers.

Primary-paint etc, high school- project submissions, etc.

Computers are now being used for classroom teaching.

The chapters are converted into power-point presentation.

Teaching and learning:

The present classroom teaching for high school is mostly text-book based.

The examinations are conducted based on the syllabus. They are written examinations.

1.Teaching concepts:

Following the text book process

Modifying the text book methods with some interesting illustrations

Totally interactive, teacher making an entire story out of a concept.

2.Solving exercises:

Give home-work and solve in class-room

Solving on the black-board

Finding answers for a question

Orally solving

Interactive solving of exercise while teachers solves on black-board.

3.Self learning:

Repetitive learning, of concepts

Practicing, etc.

Teaching and learning:

Identified some 7 different kinds of classroom teaching activities:

Give homework and solve the same in class,

Solving the problems in class, solving entirely on board,
and the students simultaneously writing.

Explaining concepts

Explaining definitions (construction of sentences)

Explaining using real life experiment to explain concepts

Gives Examples of real life to explain the same

Telling a story related to that concept

No books while learning, like in a laboratory.

Explaining a concept, not by definition, but relating to real life application.

Asking where is it used in real life

Making a story out of that, then bringing back to topic

Writing some values in board

Teaching concepts simultaneously with textbook words, making a story, Illustrating on board, and giving a similar example.

No stepwise but explaining one thing using all possible method

Weaving a story.

Question answers writing in notebook understanding in textbook

Reading out question

Asking to construct sentence.

Converting the sentence

Referring that answer in textbook

Reading the matter by student

Asking to construct sentence
Correcting the sentence
Dictating some parts
Or otherwise marking in textbook point wise.

Explaining concept of textbook
Plain explaining
No story or Example to explain
Explaining what is in textbook
Conducting the related example in text book
One way

board) Solving the entire exercise orally, writing (scribbling on

Explaining each and every step and it went wrong
Going back and forth, like if the step told by students
is wrong, then explaining
Drawing on board the figure and explaining on that or using
that.

stepwise. Then again starting with actual writing. Here writing is

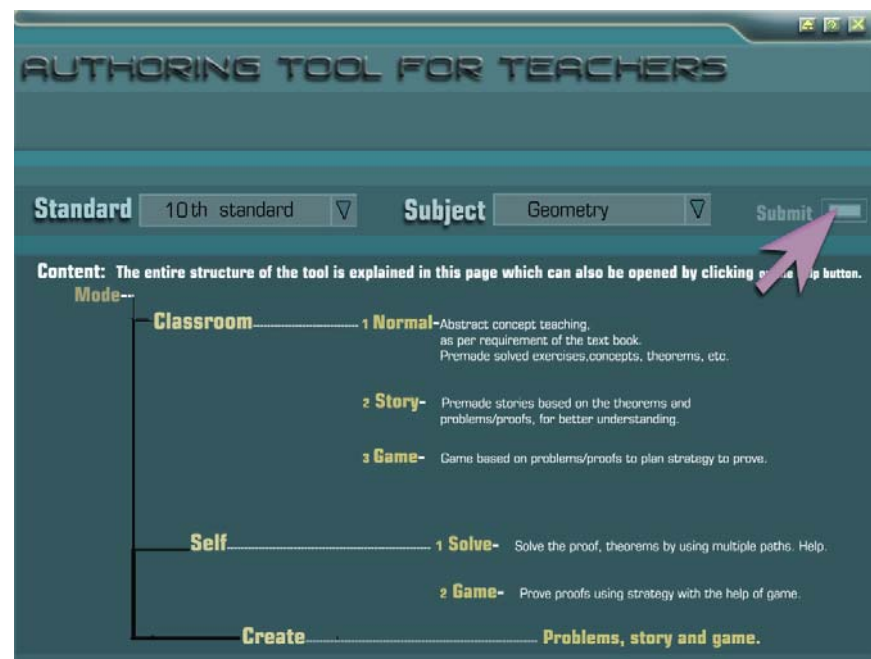
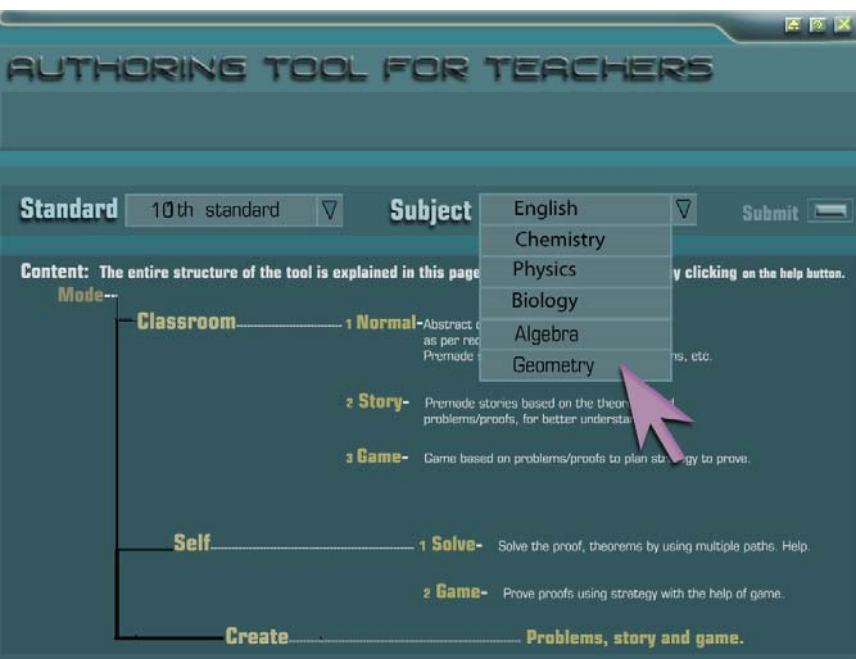
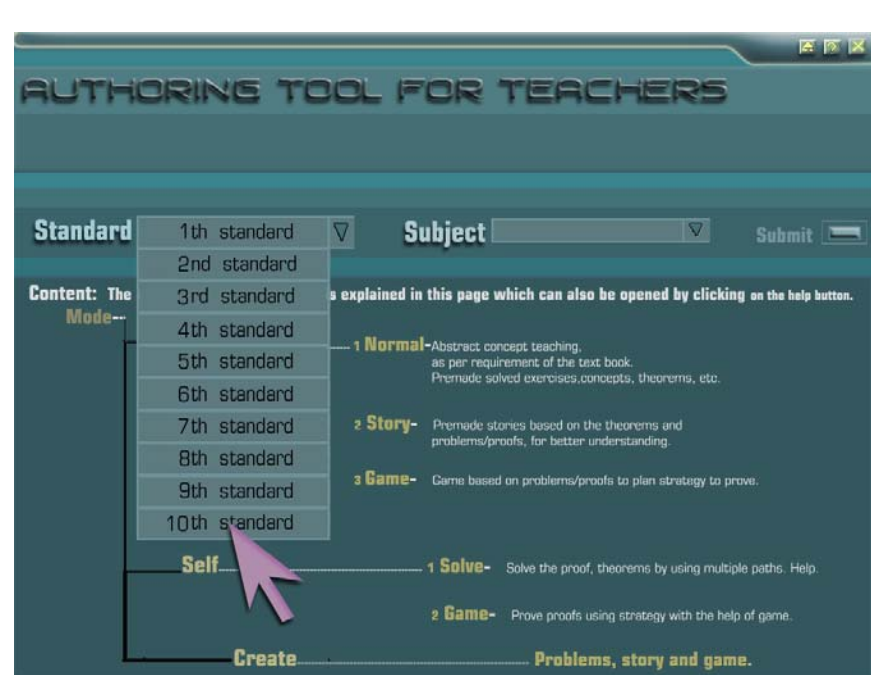
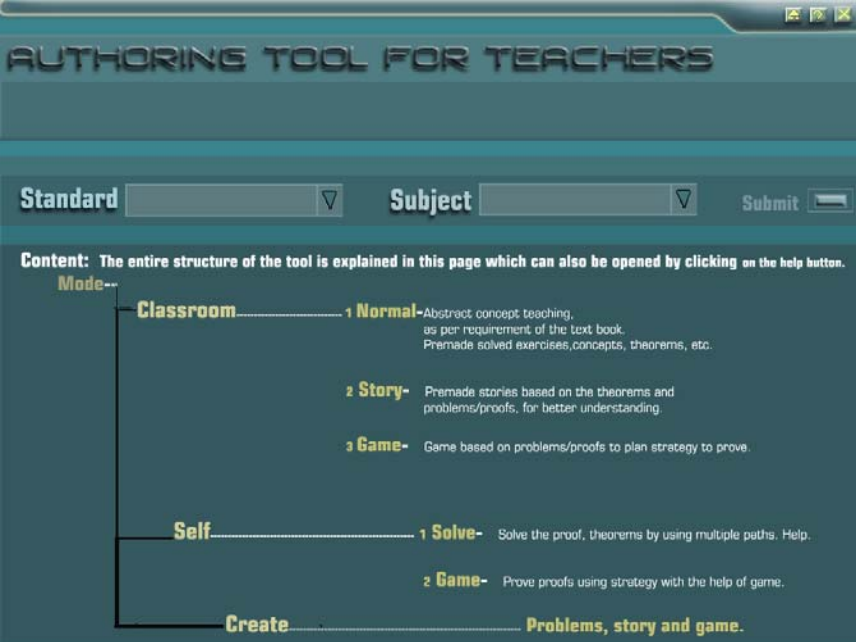
Analysis:

1. My concern was to approach the entire act of teaching and learning from the teachers point of view, where the targeted system was Maharashtra State Board.
2. With the limited computer infrastructure in schools, the computer teaching is limited to higher secondary. Although it makes more sense to introduce it at a younger class/stage.
3. The most important issue in higher schools is of time. In the limited time the concepts have to be taught.
4. Basics of geometry has to be explored from std 7th where the subject gets introduced.

5. The focused area found out was 10th standard geometry as is based on abstract concepts. Understanding concepts takes a backseat due to limited time.

6. The basics of geometry is a vast topic to be researched and studied.

7. Considering that the student knows about basics one can talk of 10th std geometry to the student in 10th standard without going into concepts of lower class.



AUTHORING TOOL FOR TEACHERS

Standard



Subject



Submit



Content: The entire structure of the tool is explained in this page which can also be opened by clicking on the help button.

Mode

Classroom

1 Normal- Abstract concept teaching,
as per requirement of the text book.
Premade solved exercises, concepts, theorems, etc.

2 Story- Premade stories based on the theorems and
problems/proofs, for better understanding.

3 Game- Game based on problems/proofs to plan strategy to prove.

Self

1 Solve- Solve the proof, theorems by using multiple paths. Help.

2 Game- Prove proofs using strategy with the help of game.

Create

Problems, story and game.

AUTHORING TOOL FOR TEACHERS

Standard

1th standard



2nd standard

3rd standard

4th standard

5th standard

6th standard

7th standard

8th standard

9th standard

10th standard

Subject



Submit



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Create

Problems, story and game.



AUTHORING TOOL FOR TEACHERS

Standard

10th standard



Subject

English



Submit



Chemistry

Physics

Biology

Algebra

Geometry

Content: The entire structure of the tool is explained in this page

by clicking on the help button.

Mode

Classroom

1 Normal

Abstract concepts as per requirement. Premade stories, etc.

2 Story

Premade stories based on the theory and problems/proofs, for better understanding.

3 Game

Game based on problems/proofs to plan strategy to prove.

Self

1 Solve

Solve the proof, theorems by using multiple paths. Help.

2 Game

Prove proofs using strategy with the help of game.

Create

Problems, story and game.



AUTHORING TOOL FOR TEACHERS

Standard

10th standard



Subject

Geometry



Submit



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Mode

Classroom

1 Normal - Abstract concept teaching, as per requirement of the text book. Premade solved exercises, concepts, theorems, etc.

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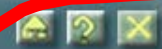
1 Solve - Solve the proof, theorems by using multiple paths. Help.

2 Game - Prove proofs using strategy with the help of game.

Create

Problems, story and game.

chapters



topics

problems

Home,
Close,
Queries.

Normal

Story

Game

These are the
navigation buttons
to flip between
modes.

Class

Self

Create



chapters



The selection for chapters.

Normal

Story

Game

This is a dynamic screen, where the animation happens.

The figures can be clicked and dragged.

Data can be viewed by clicking on the words.

Selection for problems.

tools problems

This is where the steps appear.



chapters



Chords and Tangents.

topics

problems

Normal

Story

Game

Class

Self

Create



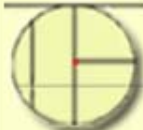
chapter



Chords and Tangents

topics

problems



- gr. A
- gr. B
- gr. C
- gr. D

Normal

Game

Class

Self

Create





Chords and Tangents

Tangent and its Properties.

problems

- gr. A
- gr. B
- gr. C
- gr. D



Normal

Story

Game

Class

Self

Create



Tangent and its Properties.

Defination:

Theorem:

1. A tangent at any point of a circle is perpendicular to the radius through point.

2. The line perpendicular to a radius at its outer end is a tangent to the circle.

Solved examples: 1 2

Exercise 3-2: 1 2 3 4 5



chapter



Chords and Tangents

topics



problems

gr.

A

gr.

B

gr.

C

gr.

D



Normal

Story

Game



Class

Self

Create

Exercise Group 'C'

No. 24 25 26 27 28 29 30 31 32 33 34





Normal

Story

Game



Class

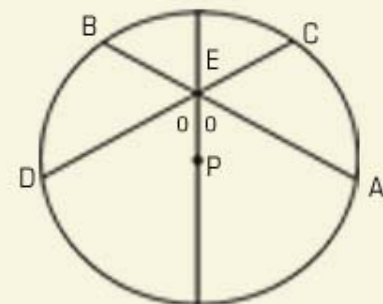
Self

Create

Exercise Group 'C'

No. 24 25 26 27 28 29 30 31 32 33 34

In the fig. P is the centre of a circle.
E is a point on a diameter. Two chords
AB and CD intersect the diameter in
E such that $\angle AEP = \angle DEP$.
Show that $AB = CD$.





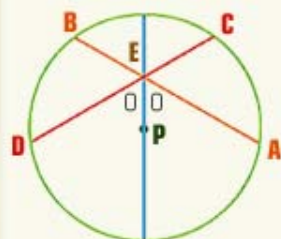
Chords and Tangents

Normal

Story

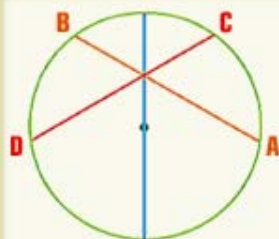
Game

Group 'C', problem no. 25



Given:

1. A circle with centre **P**.
2. **E** is a point on the diameter.
3. Chord **AB** and **CD** intersect the diameter at **E**.
4. such that $\angle AEP = \angle DEP$



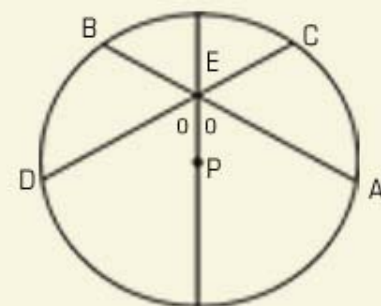
T.P.T

$$AB = CD$$

Exercise Group 'C'

No. 24 25 26 27 28 29 30 31 32 33 34

In the fig. P is the centre of a circle. E is a point on a diameter. Two chords AB and CD intersect the diameter in E such that $\angle AEP = \angle DEP$. Show that $AB = CD$.





- gr. A
- gr. B
- gr. C
- gr. D

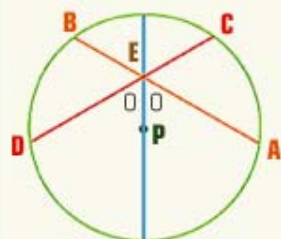
Chords and Tangents

Normal

Story

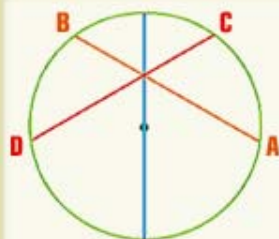
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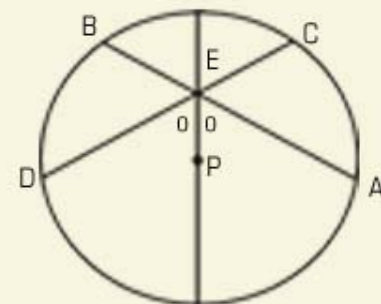
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Class

Self

Create



- gr. A
- gr. B
- gr. C
- gr. D

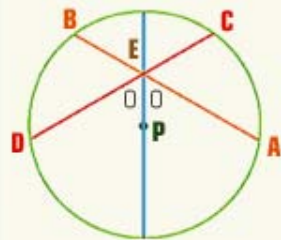
Chords and Tangents

Normal

Story

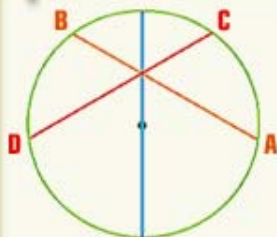
Game

Group 'C', problem no. 25



Given:

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3. Chord **AB** and **CD** intersect the diameter at **E**.
- such that $\angle AEP = \angle DEP$



T.P.T

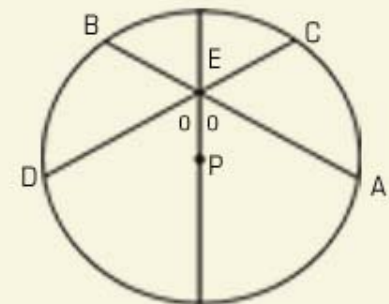
$$AB = CD$$



Exercise Group 'C'

No. **24** **25** **26** **27** **28** **29** **30** **31** **32** **33** **34**

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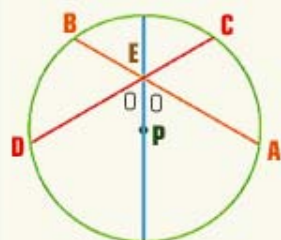
Chords and Tangents

Normal

Story

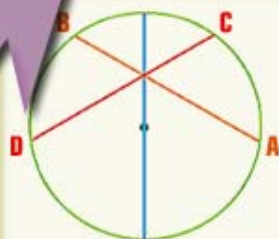
Game

Group 'C', problem no. 25



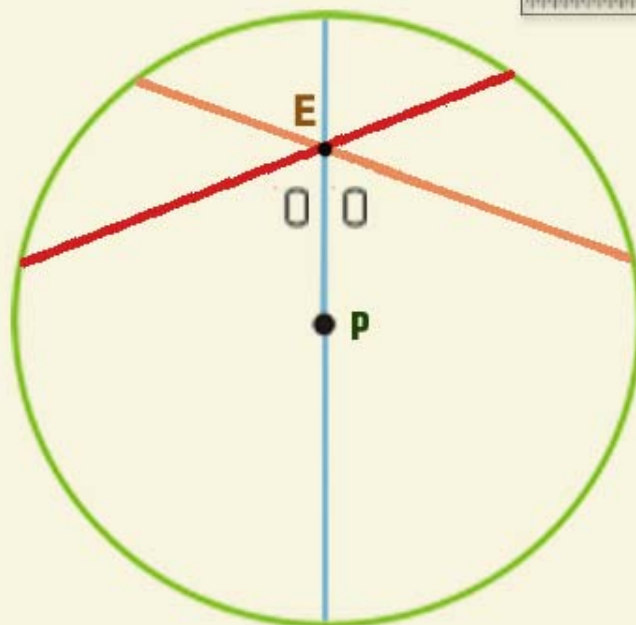
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4. such that $\angle AEP \cong \angle DEP$



T.P.T

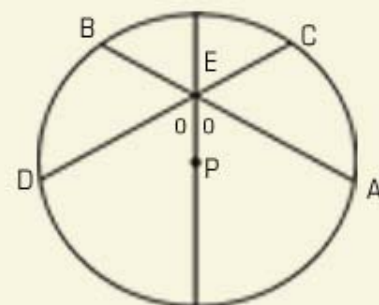
$$AB = CD$$



Exercise Group 'C'

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 Show that $AB=CD$.



Class

Self

Create



Chords and Tangents

topics

problems



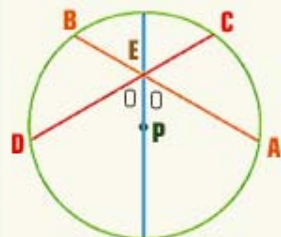
- gr. A
- gr. B
- gr. C
- gr. D

Normal

Story

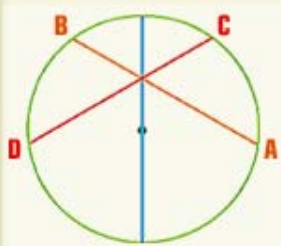
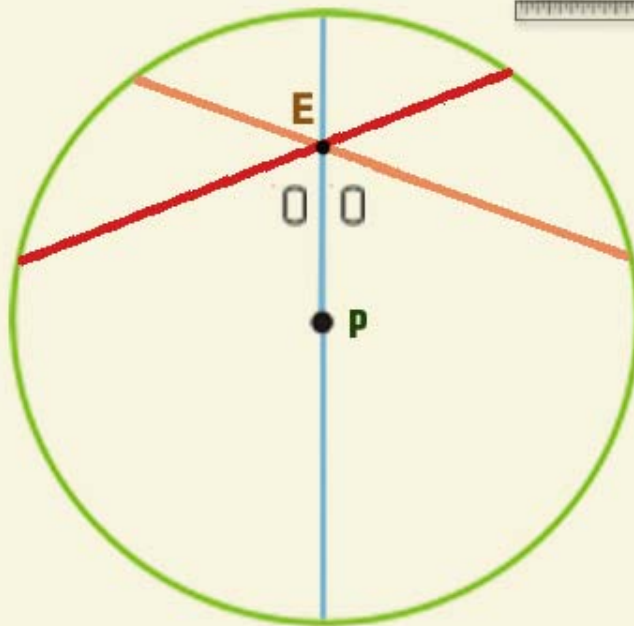
Game

Group 'C', problem no. 25



Given:

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3. Chord **AB** and **CD** intersect the diameter at **E**.
4. such that $\angle AEP \cong \angle DEP$



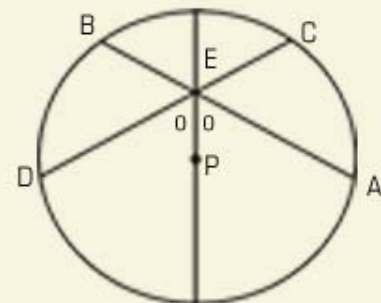
T.P.T

AB = CD

Exercise Group 'C'

No. 24 25 26 27 28 29 30 31 32 33 34

In the fig. P is the centre of a circle. E is a point on a diameter. Two chords Ab and CD intersect the diameter in E such that $\angle AEP = \angle DEP$. Show that $AB=CD$.





Chords and Tangents

topics

problems



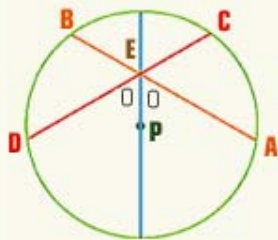
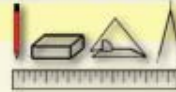
gr. A
gr. B
gr. C
gr. D

Normal

Story

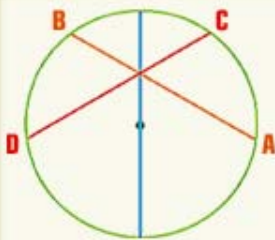
Game

Group 'C', problem no. 25



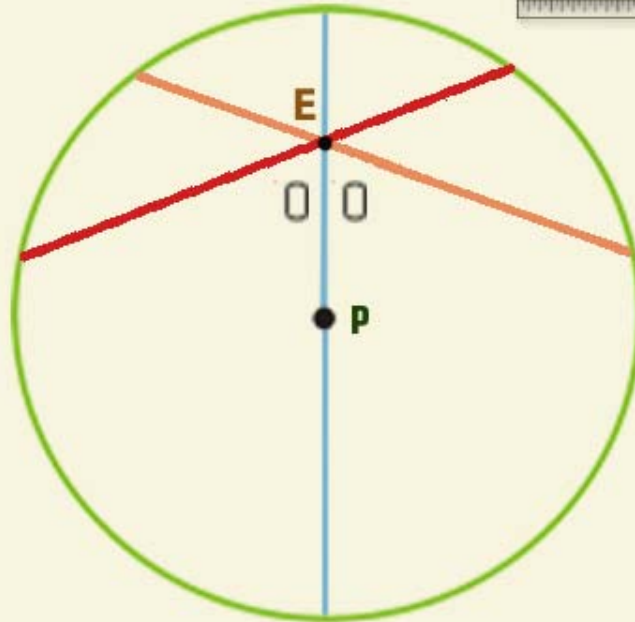
Given:

1. A circle with centre **P**.
2. **E** is a point on the diameter.
3. Chord **AB** and **CD** intersect diameter at **E**.
4. such that $\angle AEP \cong \angle DEP$



T.P.T

AB = CD



PROOF:

Statement

Reason





Chords and Tangents

topics

problems



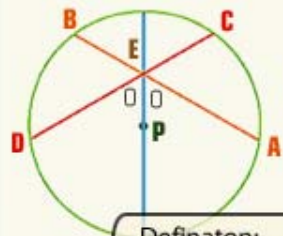
- gr. A
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Normal

Story

Game

Group 'C', problem no. 25



Defination:

Theorem - 1

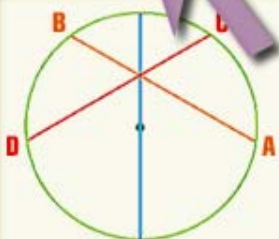
Theorem - 2

Theorem - 3

Theorem - 4

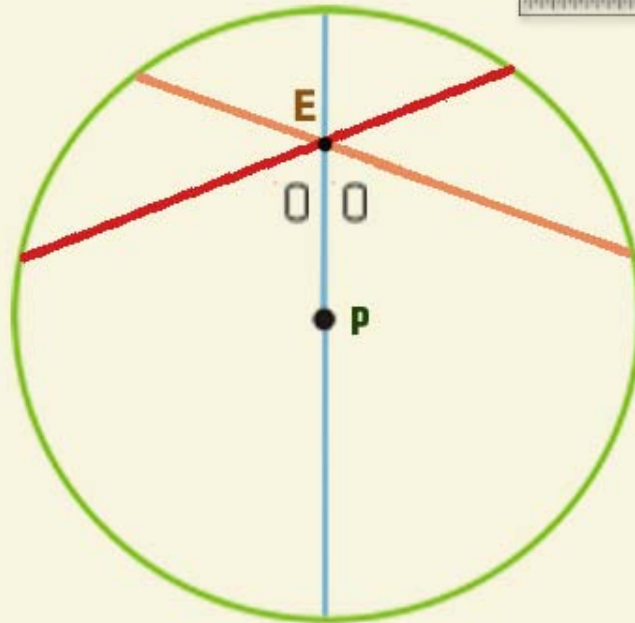
Given:

1. A circle with centre P.
2. E is a point on the diameter AB.
3. Chord CD and diameter AB intersect at E.
4. such that $\angle AEP = \angle CEP$.



T.P.T

$$AB = CD$$



=

PROOF:

Statement

Reason

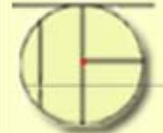




Chords and Tangents

topics

problems



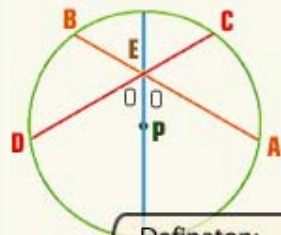
- gr. A
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Normal

Story

Game

Group 'C', problem no. 25



Defination:

Theorem - 1

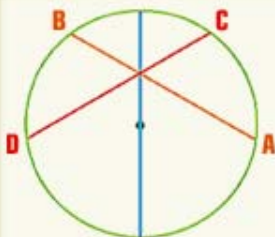
Theorem - 2

Theorem - 3

Theorem

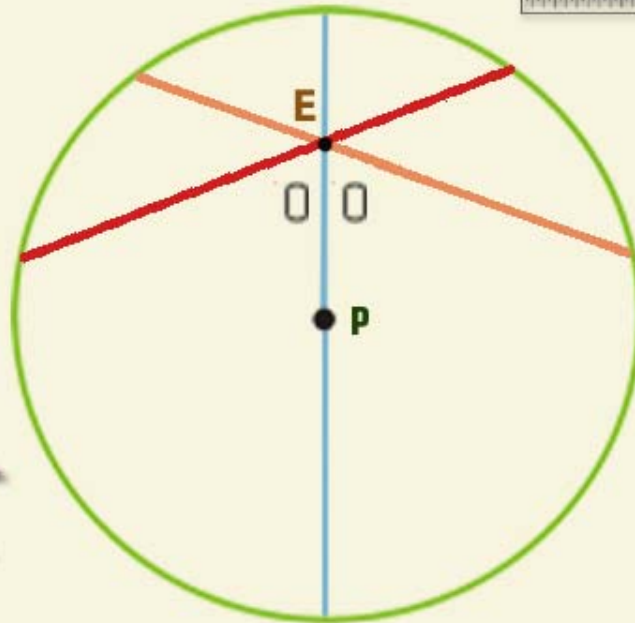
Given:

1. A circle with centre P.
2. E is a point on the diameter BE.
3. Chord AC and BD intersect at E.
4. such that $\angle AEP \cong \angle DEP$



T.P.T

$$AB = CD$$



PROOF:

Statement

Reason



In the same circle or in congruent circles, congruent chords are equidistant from centre.



Chords and Tangents

topics

problems



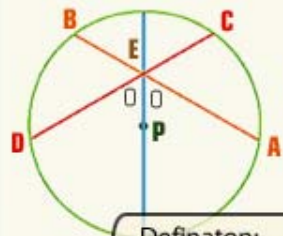
gr. A
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Normal

Story

Game

Group 'C', problem no. 25



Defination:

Theorem - 1

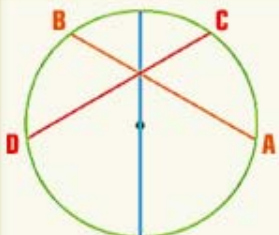
Theorem - 2

Theorem - 3

Theorem

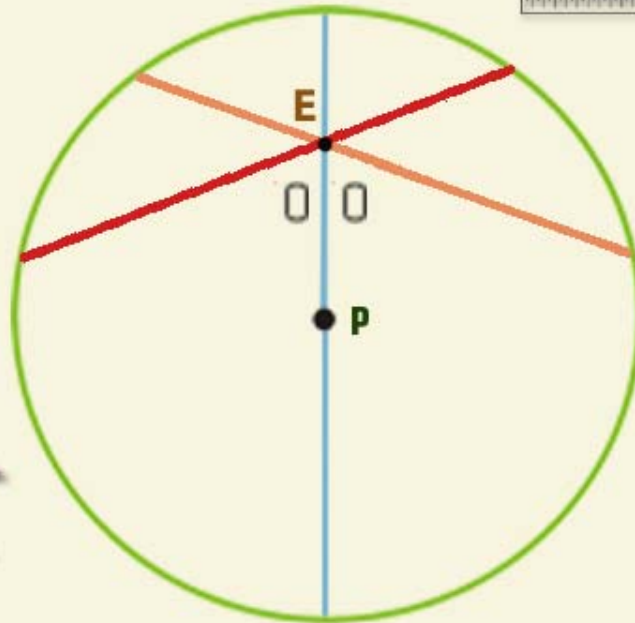
Given:

1. A circle with centre P.
2. E is a point on the diameter.
3. Chord AB and CD intersect the diameter at E.
4. such that $\angle AEP \cong \angle DEP$



T.P.T

$AB = CD$



PROOF:

Statement

Reason



In the same circle or in congruent circles, congruent chords are equidistant from the centre.



- gr. A
- gr. B
- gr. C
- gr. D

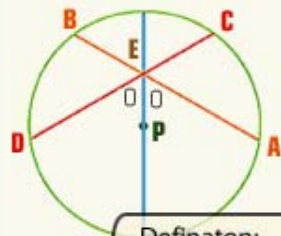
Chords and Tangents

Normal

Story

Game

Group 'C', problem no. 25



Defination:

Theorem - 1

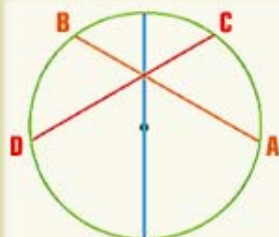
Theorem - 2

Theorem - 3

Theorem - 4

Given:

1. A circle with centre P.
2. E is a point on the diameter AD.
3. Chord BC and DE intersect at E.
4. such that $\angle AEP \cong \angle DEP$



T.P.T

$$AB = CD$$



PROOF:

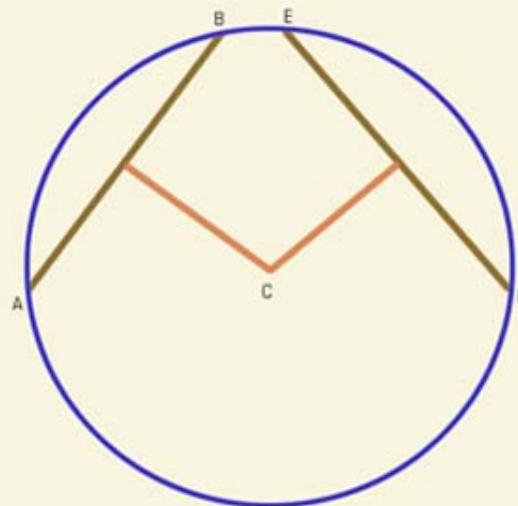
Statement

Reason

Normal

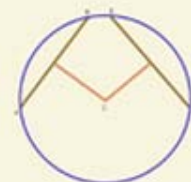
Story

Game



Theorem :

In the same circle, or congruent circles, congruent chords are equidistant from centre.





Chords and Tangents

topics

problems



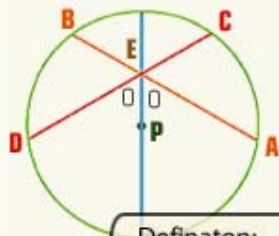
- gr. A
- gr. B
- gr. C
- gr. D

Normal

Story

Game

Group 'C', problem no. 25



Defination:

Theorem - 1

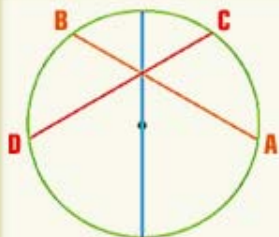
Theorem - 2

Theorem - 3

Theorem - 4

Given:

1. A circle with centre P.
2. E is a point on the diameter AB.
3. Chord CD and AB intersect at E.
4. such that $\angle AEP \cong \angle DEP$



T.P.T

$$AB = CD$$



PROOF:

Statement

Reason

Normal

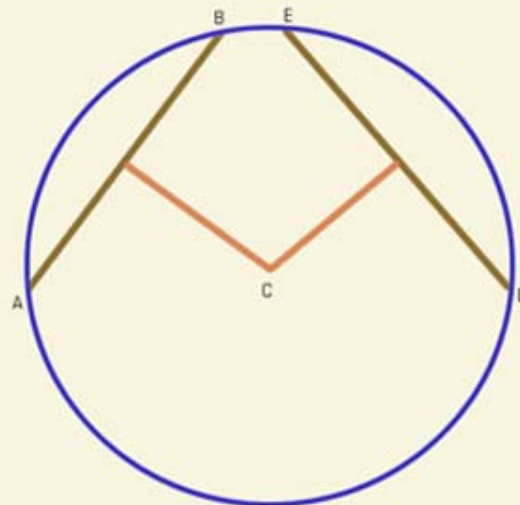
Story

Game

Class

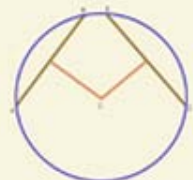
Self

Create



Theorem :

In the same circle, or congruent circles, congruent chords are equidistant from centre.



Class

Self

Create

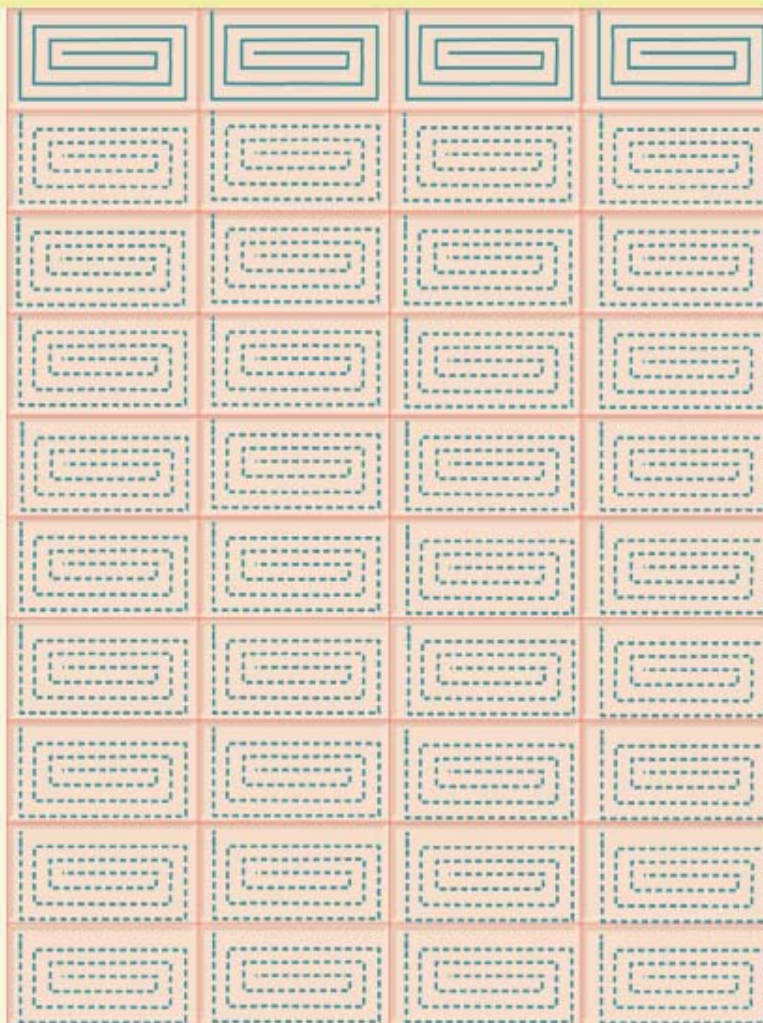


Chords and Tangents

Normal

Story

Game



score

-	+
total	



topics

problems

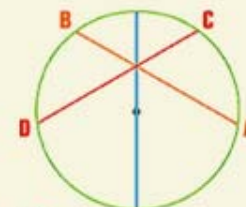
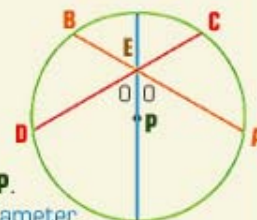


gr. A
gr. B
gr. C
gr. D

Group 'C', problem no. 25

Given:

1. A circle with centre **P**.
2. **E** is a point on the diameter.
3. Chord **AB** and **CD** intersect diameter at **E**.
4. such that $\angle AEP = \angle DEP$



T.P.T

$$AB = CD$$

Class

Self

Create

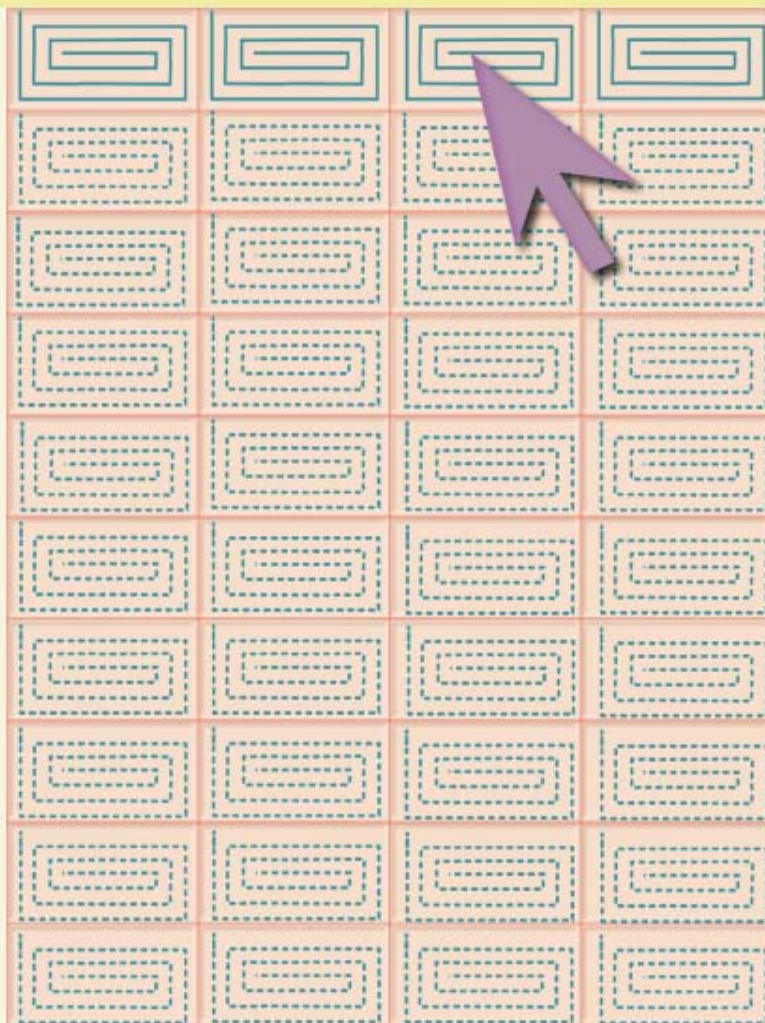


Chords and Tangents

Normal

Story

Game



score

-	+
total	



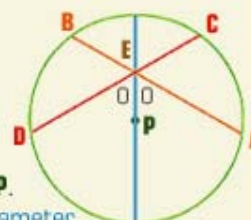
topics



problems

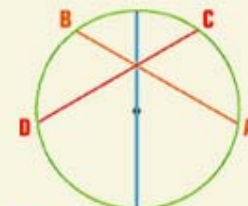
gr.	A
gr.	B
gr.	C
gr.	D

Group 'C', problem no. 25



Given:

1. A circle with centre **P**.
2. **E** is a point on the diameter.
3. Chord **AB** and **CD** intersect diameter at **E**.
4. such that $\angle AEP = \angle DEP$



T.P.T

$$AB = CD$$

Class

Self

Create



Chords and Tangents

Normal

Story

Game

		In the same circle or in congruent circles, congruent chords subtend congruent angles at the centre(s).	

score

-	+
total	

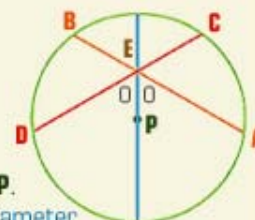
topics



problems

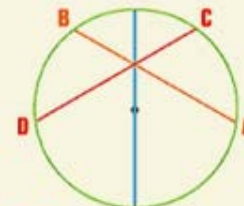
- gr. A
- gr. B
- gr. C
- gr. D

Group 'C', problem no. 25



Given:

1. A circle with centre **P**.
2. **E** is a point on the diameter.
3. Chord **AB** and **CD** intersect diameter at **E**.
4. such that $\angle AEP = \angle DEP$



T.P.T

$$AB = CD$$

Class

Self

Create

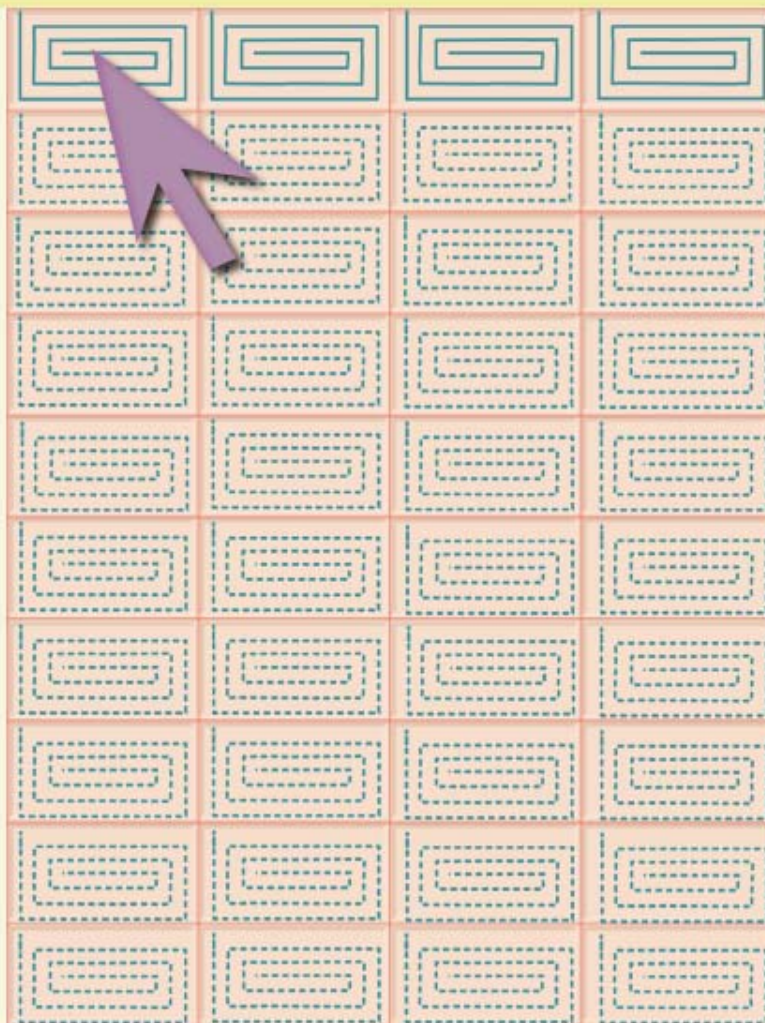


Chords and Tangents

Normal

Story

Game



score

- 1 +

total

topics

problems

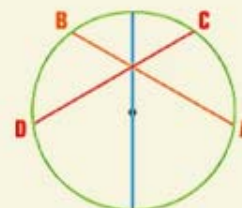
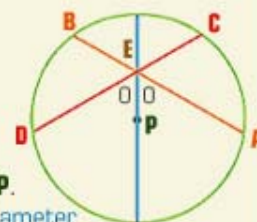


gr. A
gr. B
gr. C
gr. D

Group 'C', problem no. 25

Given:

1. A circle with centre **P**.
2. **E** is a point on the diameter.
3. Chord **AB** and **CD** intersect diameter at **E**.
4. such that $\angle AEP = \angle DEP$



T.P.T

$AB = CD$

Class

Self

Create



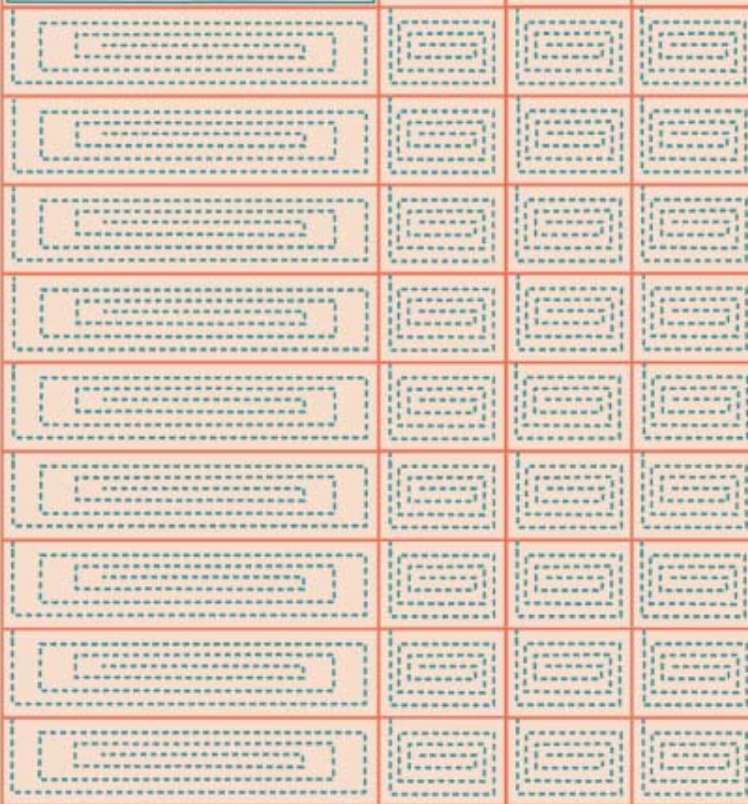
Chords and Tangents

Normal

Story

Game

In the same or congruent circles congruent chords are equidistant from the centre (centres).



score

- 1 +
total

topics

problems

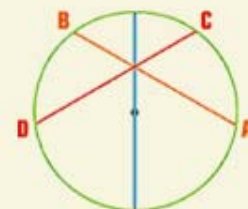
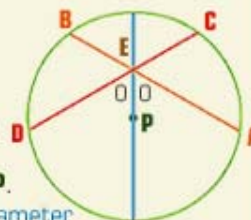


gr. A
gr. B
gr. C
gr. D

Group 'C', problem no. 25

Given:

1. A circle with centre **P**.
2. **E** is a point on the diameter.
3. Chord **AB** and **CD** intersect diameter at **E**.
4. such that $\angle AEP = \angle DEP$



T.P.T

$$AB = CD$$

Class

Self

Create



Chords and Tangents

Normal

Story

Game

In the same or congruent circles congruent chords are equidistant from the centre (centres).



score

- 1 +
total

Class

Self

Create

topics

problems

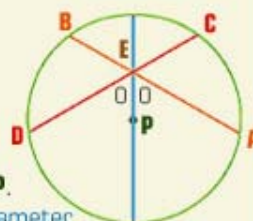


gr. A
gr. B
gr. C
gr. D

Group 'C', problem no. 25

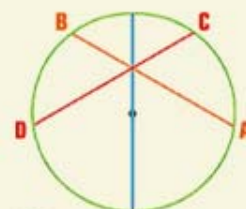
Given:

1. A circle with centre **P**.
2. **E** is a point on the diameter.
3. Chord **AB** and **CD** intersect diameter at **E**.
4. such that $\angle AEP = \angle DEP$



T.P.T

AB = CD





Chords and Tangents

Normal

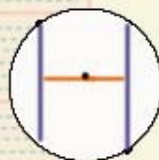
Story

Game

In the same or congruent circles congruent chords are equidistant from the centre (centres).

CHORDS

Theorem:
In the same or congruent circles congruent chords are equidistant from the centre (centres).



score

- 1 +

total

topics

problems

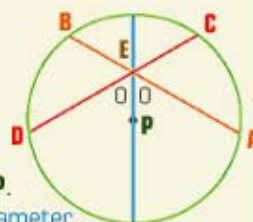


gr. A
gr. B
gr. C
gr. D

Group 'C', problem no. 25

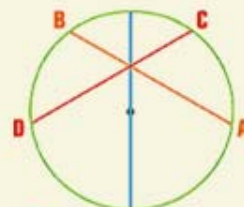
Given:

1. A circle with centre **P**.
2. **E** is a point on the diameter.
3. Chord **AB** and **CD** intersect diameter at **E**.
4. such that $\angle AEP = \angle DEP$



T.P.T

$$AB = CD$$



Class

Self

Create



Chords and Tangents

Normal

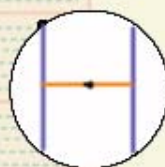
Story

Game

In the same or congruent circles congruent chords are equidistant from the centre (centres).

CHORDS

Theorem:
In the same or congruent circles congruent chords are equidistant from the centre (centres).



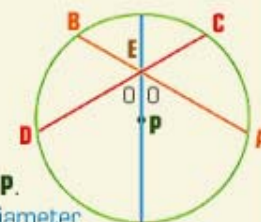
score



- 1 +

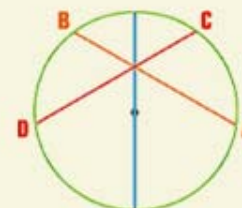
total

Group 'C', problem no. 25



Given:

1. A circle with centre **P**.
2. **E** is a point on the diameter.
3. Chord **AB** and **CD** intersect diameter at **E**.
4. such that $\angle AEP = \angle DEP$



T.P.T

$$AB = CD$$

Class

Self

Create



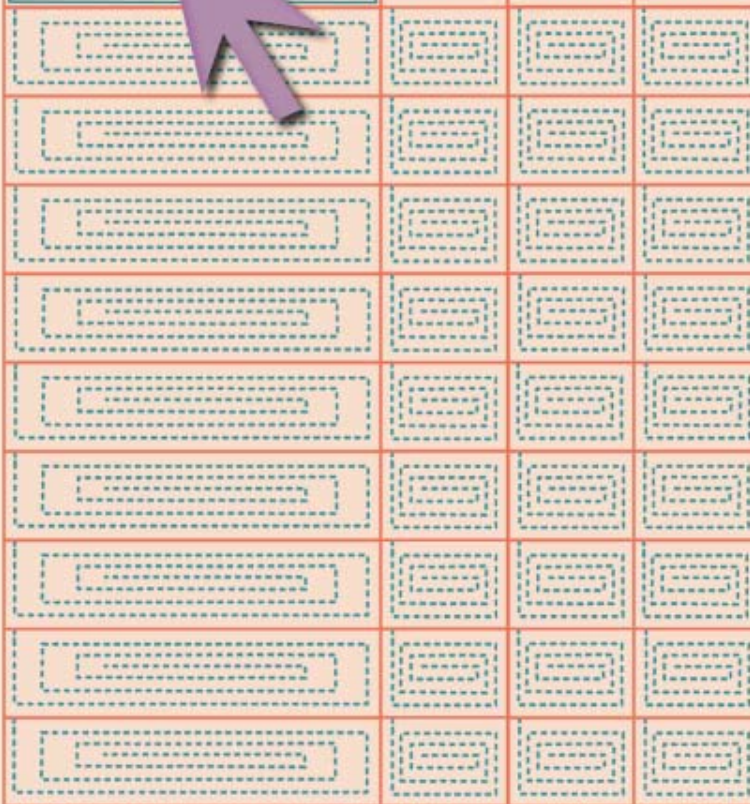
Chords and Tangents

Normal

Story

Game

In the same or congruent circles congruent chords are equidistant from the centre (centres).



score

- 1 +
total

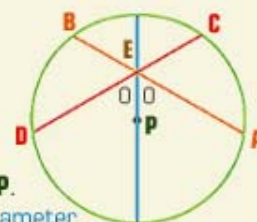
topics



problems

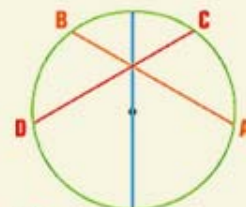
gr. A
gr. B
gr. C
gr. D

Group 'C', problem no. 25



Given:

1. A circle with centre **P**.
2. **E** is a point on the diameter.
3. Chord **AB** and **CD** intersect diameter at **E**.
4. such that $\angle AEP = \angle DEP$



T.P.T

$AB = CD$

Class

Self

Create



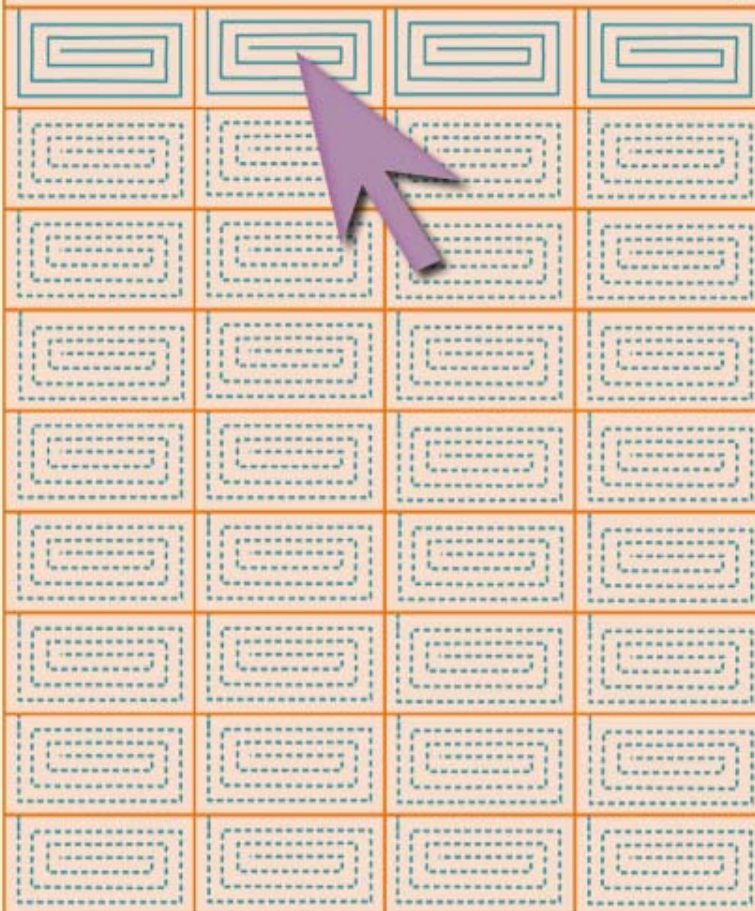
Chords and Tangents

Normal

Story

Game

Draw seg PM $\perp$ AB, seg PN $\perp$ DC. Construction



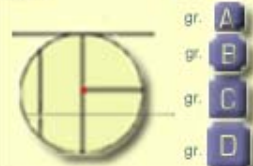
score

1

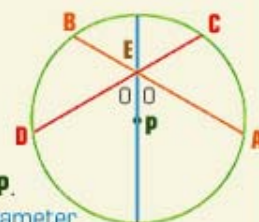
- 1 +
total
0 0

topics

problems

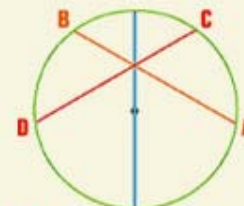


Group 'C', problem no. 25



Given:

1. A circle with centre P.
2. E is a point on the diameter.
3. Chord AB and CD intersect diameter at E.
4. such that $\angle AEP = \angle DEP$



T.P.T

$AB = CD$

Class

Self

Create



Chords and Tangents

Normal

Story

Game

Draw seg $PM \perp AB$, seg $PN \perp DC$. Construction

Given in the problem that
angle
 $\angle AEP \cong \angle CEP$



score

0

- +
total
0

topics

problems

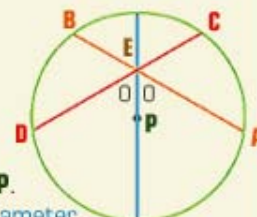


gr. A
gr. B
gr. C
gr. D

Group 'C', problem no. 25

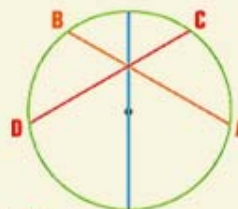
Given:

1. A circle with centre **P**.
2. **E** is a point on the diameter.
3. Chord **AB** and **CD** intersect diameter at **E**.
4. such that
 $\angle AEP = \angle CEP$



T.P.T

$AB = CD$



Class

Self

Create



Chords and Tangents

Normal

Story

Game

Draw seg $PM \perp AB$, seg $PN \perp DC$. Construction

Given in the problem that
angle
 $\angle AEP \cong \angle CEP$



score

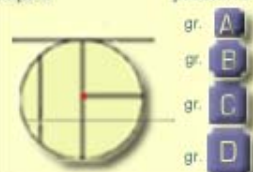
0

1

- +
total
0

topics

problems



Group 'C', problem no. 25

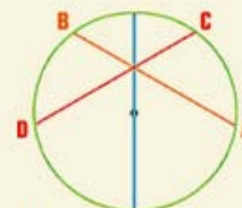
Given:

1. A circle with centre **P**.
2. **E** is a point on the diameter.
3. Chord **AB** and **CD** intersect diameter at **E**.
4. such that
 $\angle AEP = \angle DEP$



T.P.T

AB = CD



Class

Self

Create



topics

problems



gr. A
gr. B
gr. C
gr. D

Chords and Tangents

Normal

Story

Game

Draw seg $PM \perp AB$, seg $PN \perp DC$.

Construction



$\angle AEP \cong \angle CEP$

Given



Seg $PM \perp$ chord CD

Construction



Seg $PN \perp$ chord AB

Construction



In $\triangle PME$ and $\triangle PNE$ $\angle MEP \cong \angle NEP$

Given



$\angle EMP \cong \angle ENP$

90 degree



Seg $EP \cong$ Seg EP

Self congruency



$\angle EPM \cong \angle EPN$

S A A Test



Seg $PM \cong$ Seg PN

C. S. C. T.



Chord $AB \cong$ Chord CD

chords equidistant from centre are congruent.



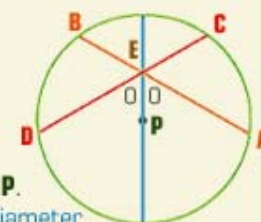
score

1

1

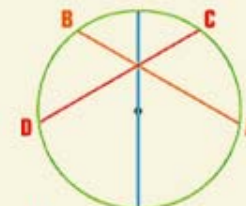
- +
total

Group 'C', problem no. 25



Given:

1. A circle with centre **P**.
2. **E** is a point on the diameter.
3. Chord **AB** and **CD** intersect diameter at **E**.
4. such that $\angle AEP = \angle DEP$



T.P.T

$AB = CD$

Hence proved!

Class

Self

Create

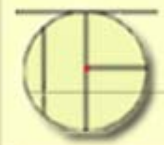
chapter



Chords and Tangents

topics

problems



- gr. A
- gr. B
- gr. C
- gr. D

Normal

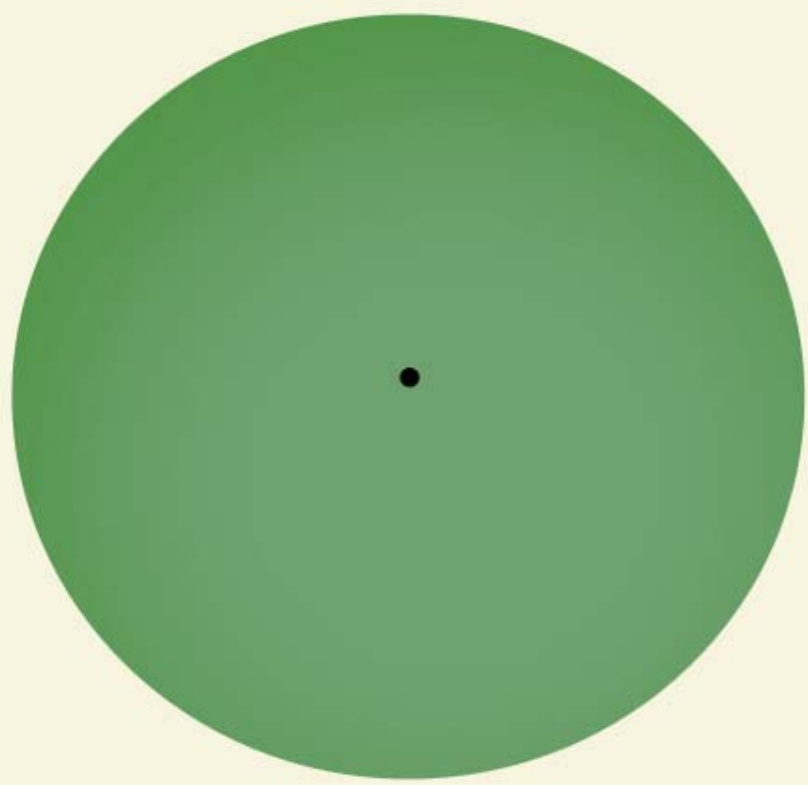
Story

Game

Class

Self

Create



This is a circular ground.

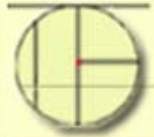




Chords and Tangents

topics

problems



- gr. A
- gr. B
- gr. C
- gr. D

Normal

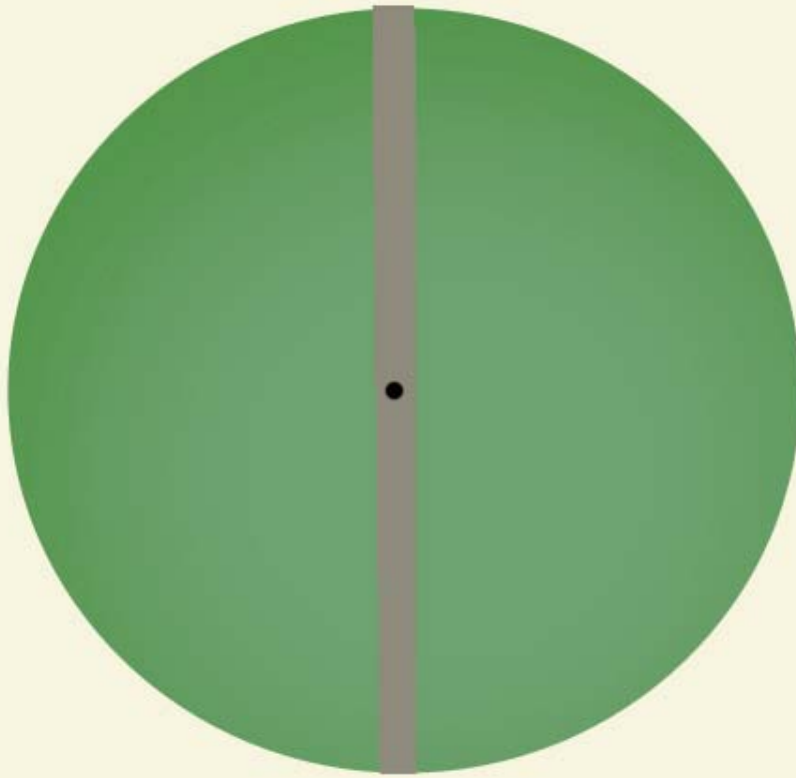
Story

Game

Class

Self

Create



This is a circular ground.

A 'road to bombay' passes through the centre of the ground.





Chords and Tangents



topics

problems



- gr. A
- gr. B
- gr. C
- gr. D

Normal

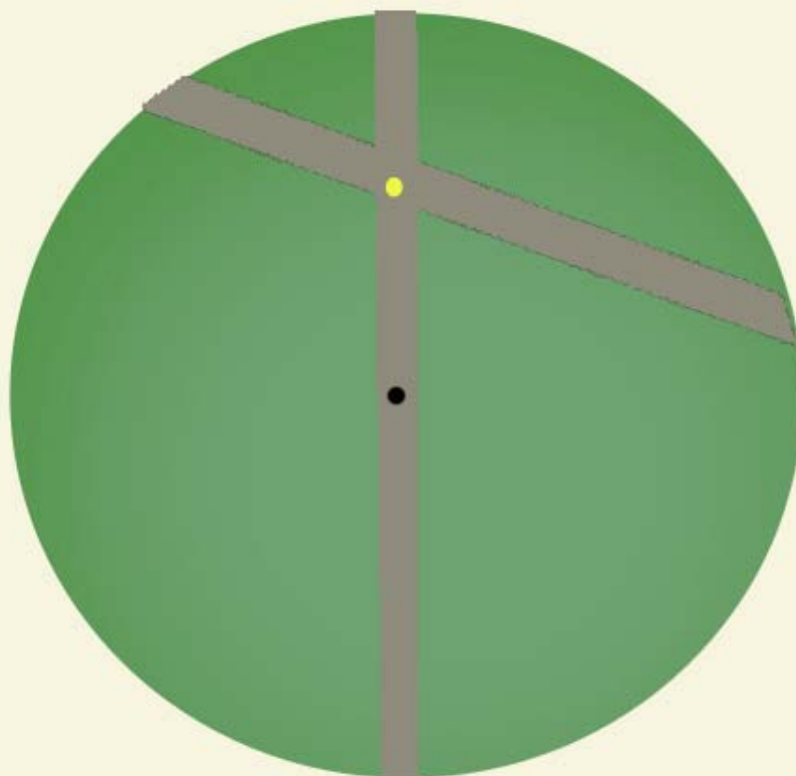
Story

Game

Class

Self

Create



This is a circular ground.

A 'road to Bombay' passes through the centre of the ground.

Another road say 'road to nasik' crosses the road to Bombay at yellow junction..





Chords and Tangents



topics

problems



- gr. A
- gr. B
- gr. C
- gr. D

Normal

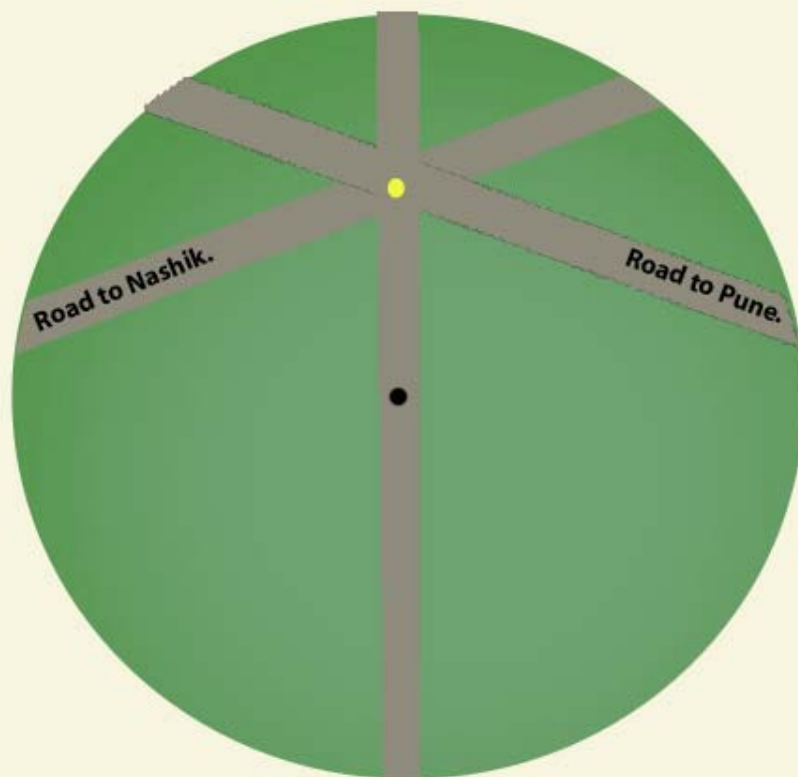
Story

Game

Class

Self

Create



This is a circular ground.

A 'road to Bombay' road to Bombay passes through the centre of the ground.

Another road say 'road to Nashik' crosses the road to Bombay at yellow junction..

A road to pune crosses these two roads at the yellow junction.





topics

problems



gr. **A**
gr. **B**
gr. **C**
gr. **D**

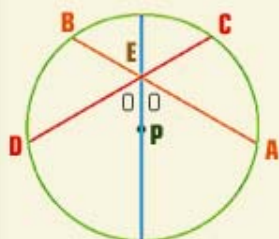
Chords and Tangents

Normal

Story

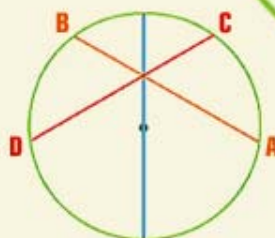
Game

Group 'C', problem no. 25



Given:

1. A circle with centre **P**.
2. **E** is a point on the diameter.
3. Chord **AB** and **CD** intersect diameter at **E**.
4. such that $\angle AEP = \angle DEP$



T.P.T

$$AB = CD$$



Class

Self

Create



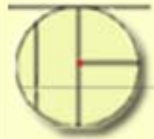
chapter



Chords and Tangents

topics

problems



- gr. A
- gr. B
- gr. C
- gr. D

Normal

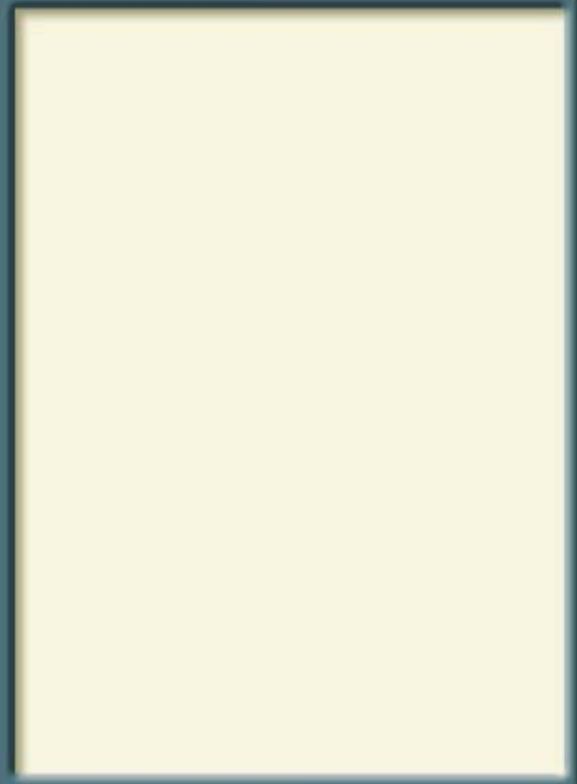
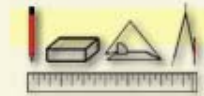
Story

Game

Class

Self

Create





Usability testing:

School visited: Godrej High School, Vikhroli.

Name of the teacher-

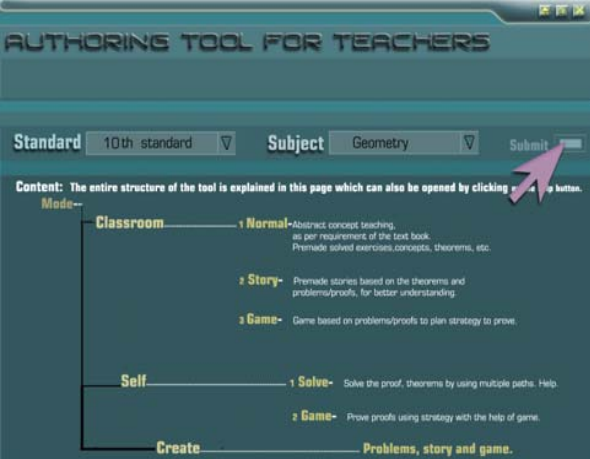
1. Mrs. Rekha Pande

Designation- Head of the math's section for high school.

2. Gurpreet Kaur

Designation: Math's teacher high school.

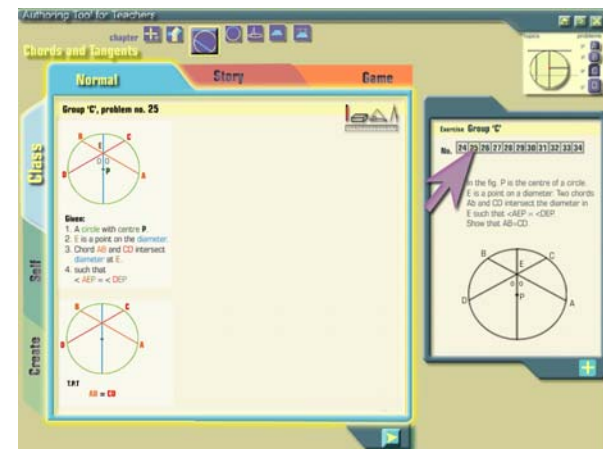
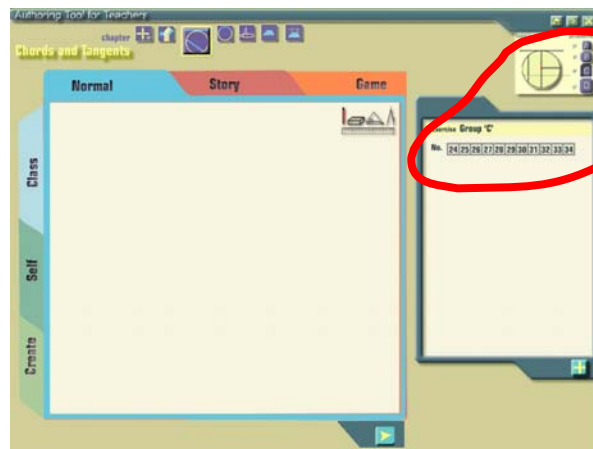
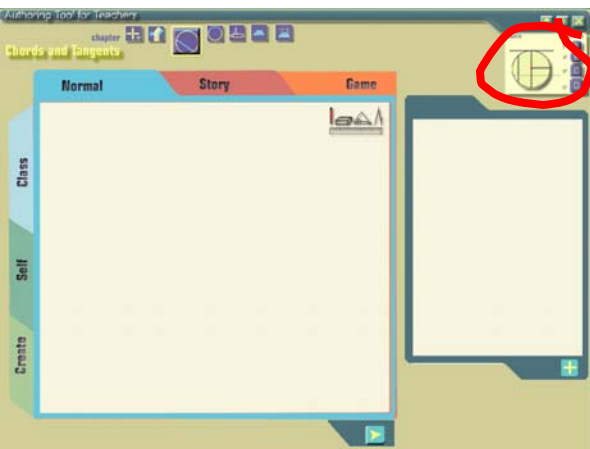
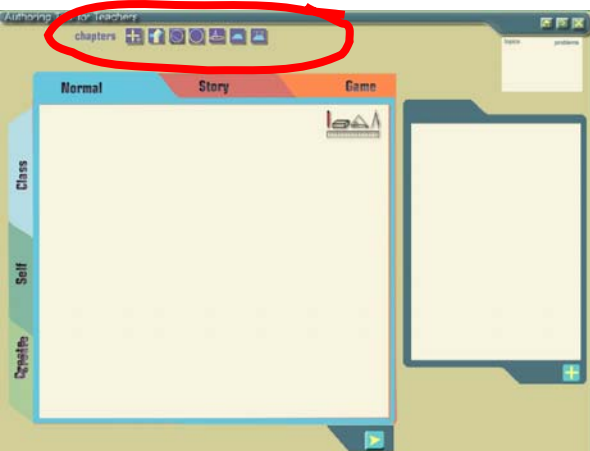


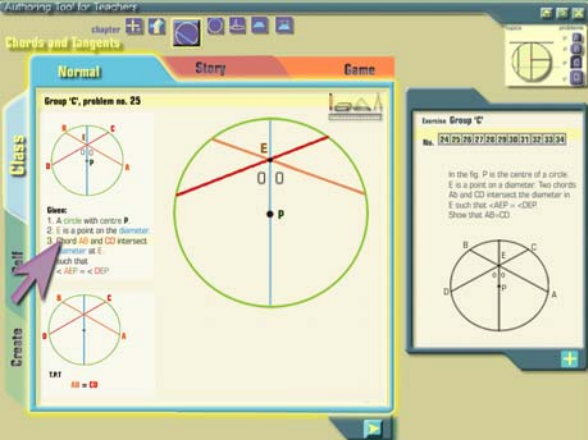


Comments:

Navigation:

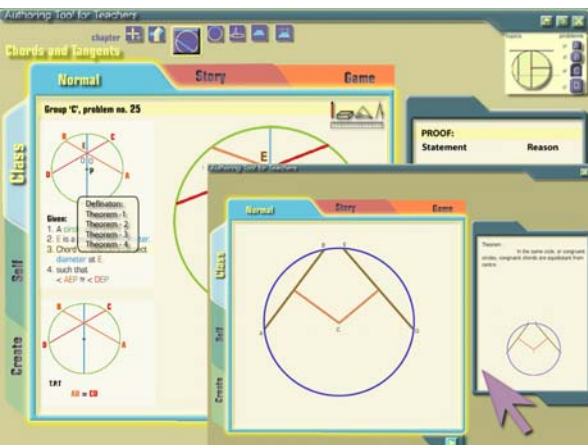
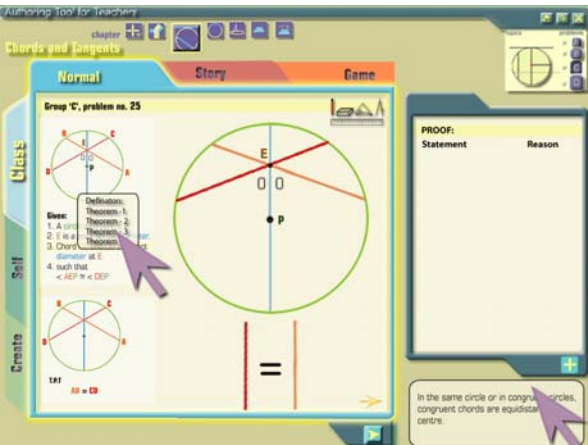
- The initial screens till they submit went fine.
- The main page, they had to search what to do next to select chapter.
- After selection of chapter, had problem in finding how to open problem no. 25 of group c, and they kept searching near the chapter option. Finally clicked on 'c' as teacher understood that they were problems.
- Finally selected the problem.
- then they tried clicking the play button, that clicking on steps will actually make that step animate.
- The over-all navigation was not a problem.

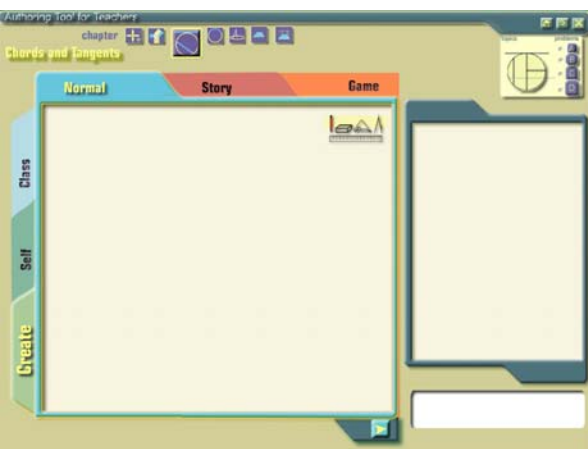
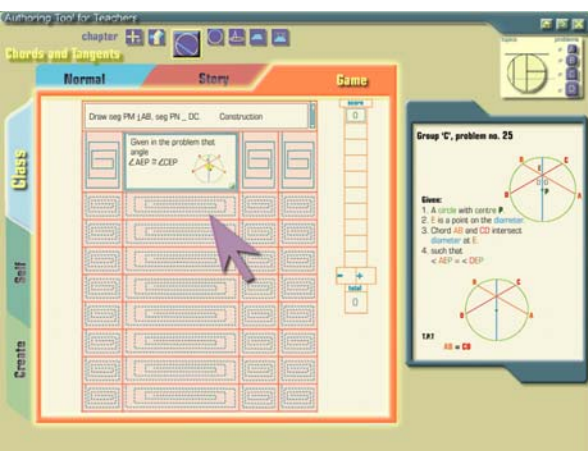
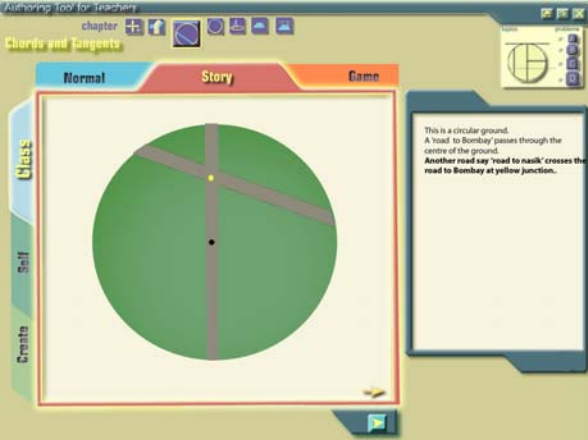




Content of the application:

1. Extremely helpful, in the sense of now all the attention will be on understanding and not writing down the steps.
2. The dynamic screens will be really helpful, as there is always a problem in explaining without the visuals.
3. The writing part taken care by the computer will be helpful.
4. The use of visual, colours, animation will make the learning worthwhile.





5. The story part and the game will not be helpful as the course is packed and time is a big restriction, but for lower classes it will be very helpful.

6. Same with the game, but it can be used instead of class test.

7. The game mode has a problem that if there are multiple steps to prove the student might get confused, because as per the rules we have to teach what is there in the book. As to prove a Pythagoras theorem there are many ways, but in the book the method is given is proving by similarity.

8. So, only that method mentioned in the text book should be used so as to not further confuse the student.

9. The create mode will not be so useful for classroom teaching as the course itself has to be completed

10. For a student all the modes will be extremely helpful to understand.

Implementation:

1. The infrastructure available in the school with projector room, this can be implemented today itself.
2. Other schools are also feeling the need of this new media to teach , and it is not so far that all schools will have computer facility.

Overall they found the application extremely helpful, and they are planning to take the idea further.

Teaching aid for Teachers

Standard 10th standard Subject Geometry

Options 1 Similarity 2 Theorem of Pythagoras 3 Circle and Angles 4 Arc of circle 5 Geometrical construction 6 Area 7 Surface area and Volume Theorems Problems

Circle and Angles

Team A

Draw seg PM LAB, seg PN DC
Construction

Team B

Group C, problem no. 25

Given:

1. A circle with centre O
2. A point P on the circle
3. Chord AC and CD intersect at point B
4. with that $\angle ACP = \angle BCP$

OR

Team A

Team B

Teaching aid for Teachers

Standard 10th standard Subject Geometry

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10

Teaching aid for Teachers

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Circle and Angles

Team A

Draw seg PM LAB, seg PN DC
Construction

Team B

Join DA and BC
Construction

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Team A

Team B

10

10

Thank You

Teaching aid for Teachers

Standard 10th standard Subject Geometry

Options 1 Similarity 2 Theorem of angles 3 Chords and Angles 4 Arc of circle 5 Geometrical construction 6 Area 7 Surface area and Volume Theorems Problems

Chords and Angles

Team A

Draw seg PM ⊥ AB, seg PN ⊥ DC Construction

The diameter bisects the angle AED. — Given

Team B

Join DA and BC — Construction

Group 1, problem no. 25

Draw:

1. A circle with centre O
2. A line segment AB passing through the centre O
3. Chord AC and CD intersect at point E
4. such that $\angle AED = 90^\circ$

Team A Team B

10 10

Teaching aid for Teachers

Standard 10th standard Subject Geometry

Options 1 Similarity 2 Theorem of angles 3 Chords and Angles 4 Arc of circle 5 Geometrical construction 6 Area 7 Surface area and Volume Theorems Problems

Chords and Angles

Team A

Draw seg PM ⊥ AB, seg PN ⊥ DC Construction

$\angle AEP = \angle DEP$ — Given

Team B

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Teaching aid for Teachers

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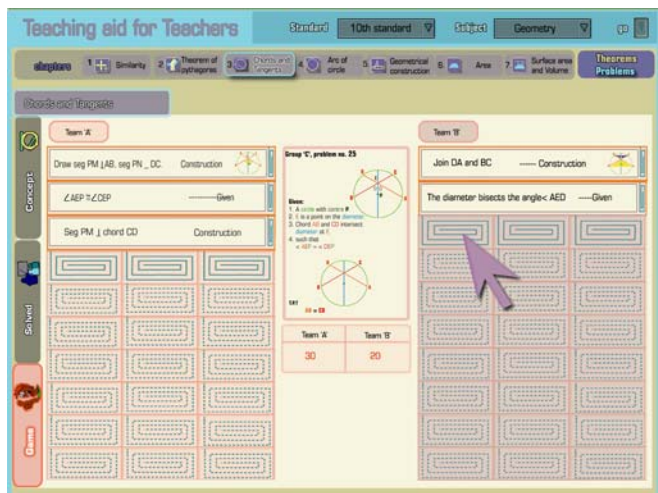
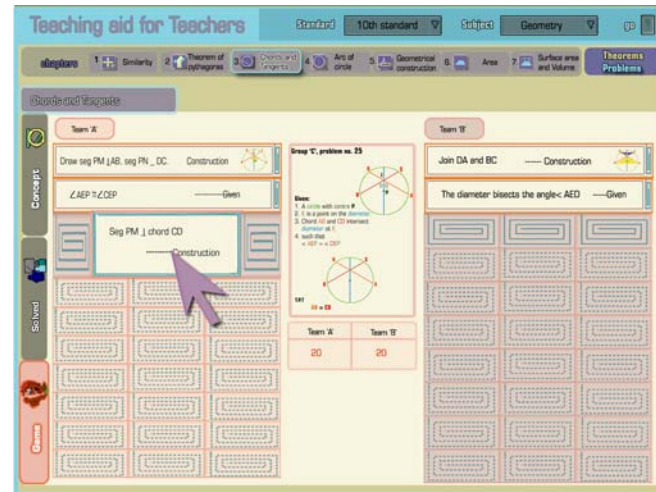
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Team A Team B

20 20

Thank You



Thank You

Teaching aid for Teachers

Standard 10th standard Geometry

Navigation: 1. Similarity 2. Theorem of Angles 3. Chords and Arcs 4. Arc of circle 5. Geometrical construction 6. Area 7. Surface area and Volume

Proof: Group C, problem no. 25

Concept

Given:

1. A circle with centre P
2. E is a point on the diameter
3. Chord AB and CD intersect diametrically at E .
4. such that $\angle AEP = \angle DEP$

To Prove: $AB = CD$

Print

Teaching aid for Teachers

Standard 10th standard Geometry

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To Prove: $AB = CD$

Print

Thank You

Teaching aid for Teachers Standard 10th standard 11:44 Geometry

1 Similarity 2 Theorem of Angles 3 Chords and Arcs 4 Arc of circle 5 Geometrical construction 6 Area 7 Surface area and Volume Theorems Problems

Proof: Group 'C', problem no. 25

Given:

1. A circle with centre P .
2. E is a point on the diameter.
3. Chord AB and CD intersect diameter at E .
4. such that $\angle AEP = \angle DEP$.

To Prove: $AB = CD$

Teaching aid for Teachers Standard 10th standard 11:44 Geometry

1 Similarity 2 Theorem of Angles 3 Chords and Arcs 4 Arc of circle 5 Geometrical construction 6 Area 7 Surface area and Volume Theorems Problems

Proof: Group 'C', problem no. 25

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To Prove: $AB = CD$

Teaching aid for Teachers Standard 10th standard 11:44 Geometry

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Proof: Group 'C', problem no. 25

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To Prove: $AB = CD$

Teaching aid for Teachers Standard 10th standard 11:44 Geometry

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Proof: Group 'C', problem no. 25

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4. such that $\angle AEP = \angle DEP$.

To Prove: $AB = CD$

Thank You

Teaching aid for Teachers

Standard 10th standard Geometry

Proof: Group C, problem no. 25

Concept

Game

1. A circle with centre P .

2. E is a point on the diameter.

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4. such that $\angle AEP = \angle DEP$.

1. $AB = CD$

Teaching aid for Teachers

Standard 10th standard Geometry

Proof: Group C, problem no. 25

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Teaching aid for Teachers

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Teaching aid for Teachers

Standard 10th standard Geometry

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Thank You



You





Thank You

Thank You

Thank You

Thank You

Thank You