Cross sections of a tetrahedron	Season	2
	Episode	15
	Time frame	1 period

Objectives :
- Discover the concept of cross section of a solid.
- Review the conceptq of collinearity and coplanarity in 3D.
- Study the possible cross sections of a tetrahedron.

Materials :
- *Six copies of six different problems.*
- *One answer sheet for each student.*
- *Beamer.*

1 – Introduction — 5 mins

The teacher introduces the concept of cross section, with a beamer. The examples given are the cross sections of a sphere, that are always circles. Then, the plan of the chapter is given : tetrahedron, cube and cone.

2 – Individual work — 10 mins

Each student is given a problem about how to cut a tetrahedron to get a certain cross section shape.

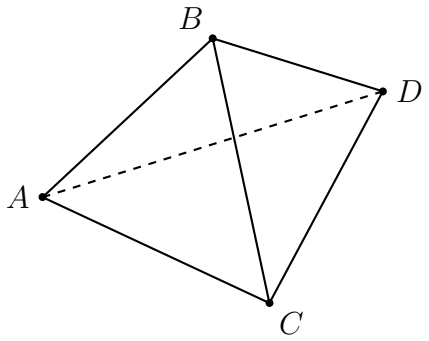
3 – Group work — Remaining time

Students mingle to form six groups of six people with different problems. They explain and check each other's answer to fill out an answer sheet with the answers to the six problems. At the end of the hour, each group has to hand out to the teacher the six answer sheets. These six answer sheets are then marked and graded. If the 6 answer sheets of a group are not exactly the same, the lowest mark is credited to every member of the team.

Cross sections of a tetrahedron	Season	2
	Episode	15
	Document	Answer sheet

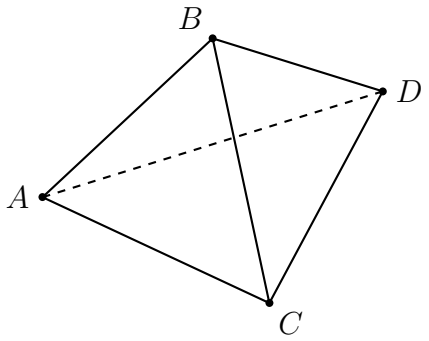
Problem 1

The cross section is .....



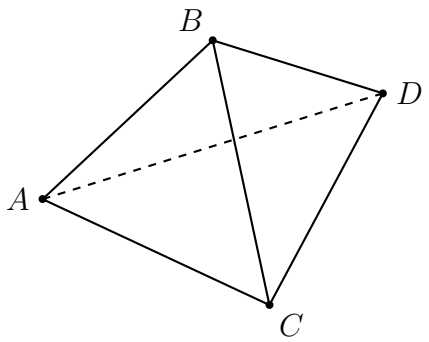
Problem 2

The cross section is .....



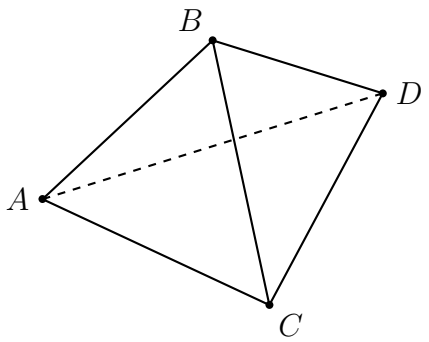
Problem 3

The cross section is .....



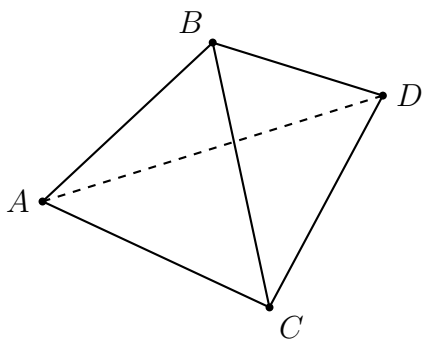
Problem 4

The cross section is .....



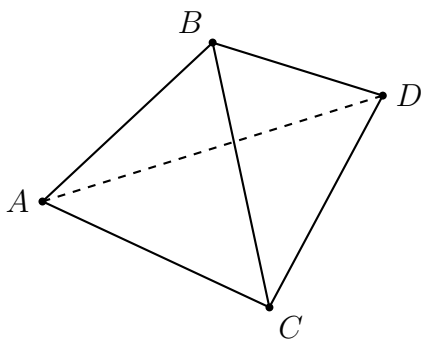
Problem 5

The cross section is .....



Problem 6

The cross section is .....



Document 1 Six cross section problems

Problem 1 : Find a way to cut a regular tetrahedron so that the cross section is *an equilateral triangle*.

Problem 2 : Find a way to cut a regular tetrahedron so that the cross section is *an isosceles triangle*, an not an equilateral one.

Problem 3 : Find a way to cut a regular tetrahedron so that the cross section is *a scalene triangle*.

Problem 4 : Find a way to cut a regular tetrahedron so that the cross section is *a square*.

Problem 5 : Find a way to cut a regular tetrahedron so that the cross section is *a rectangle* and not a square.

Problem 6 : Find a way to cut a regular tetrahedron so that the cross section is *a trapezium* and not a rectangle.
