

[50 minute lesson]

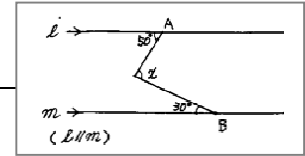
Japan Public Release Lesson 1 Lesson Graph [8th grade]



2 minutes

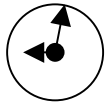
Public Class Work: Reviewing yesterday's problem

Find the angle in the bend with any method from the three problem solving methods (learned in yesterday's lesson).



Private Class Work: Students work on yesterday's problem

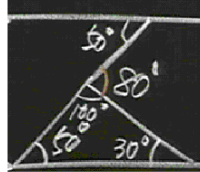
Students' work on solving the problem.



6 minutes

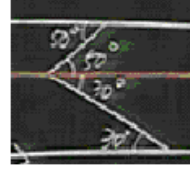
Public Class Work: Three students share their solution methods

1. Arai's Method



"The line there, extend it. 50°...the alternate interior angles of it. That is 50°, so the angle on the right side of the bottom line is 30°. If you add it all up it becomes 180°, so the top part is 180°. A straight line becomes 180 degrees, so x is 80°."

2. Bunya's Method



"Draw a parallel line...the top is 50° ...the alternate interior angles of that is made there so...it's 50°. The bottom is 30°, it can also be done in the same way."

3. Chika's Method



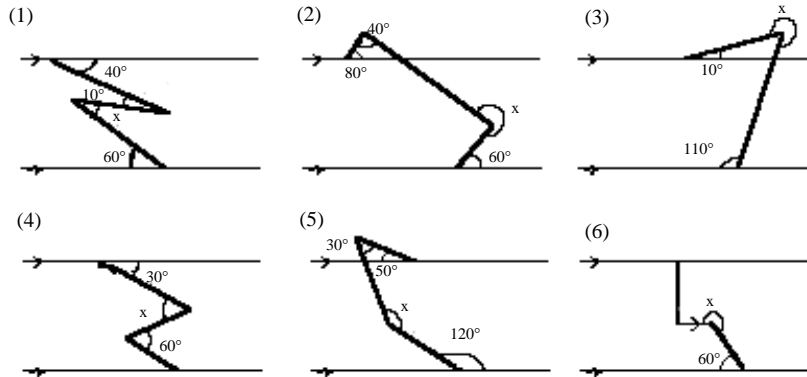
"The straight line is 180° so the angle of A becomes 130°. Since if you add up all of the angles of a quadrilateral it becomes 360°. If you add, it becomes 280°. Subtract 280° from 360°. x becomes 80°."

The teacher summarizes the methods: "In order to find the value of angle x between the two parallel lines it is important to add the auxiliary lines and there are three ways to do this: 1) Draw parallel lines; 2) Construct a triangle; 3) Construct a quadrilateral."

Private Class Work: Students work on today's task of creating their own problems

The teacher says, "Today I will have you make your own problems. We won't change the parallel lines, but the middle. When you turn it in you must be able to solve it."

After 13 minutes of observing and discussing students' problems, the teacher says, "Well it seems a little hard. I made a mistake. There are many of you that are in trouble. Get into our groups and pick a problem you and others think is challenging, and group leaders please bring them up here. Please check if the problems can really be solved." The students bring them up to the teacher and he copies the six problems onto the blackboard.



Public Class Work: Copy the six problems on the worksheet

The teacher asks students to copy the six problems.

Private Class Work: Students work on six problems

The teacher says that there seems to be one that seems too challenging.

The teacher and students name the problems according to their difficulty with group names: "Gum"; "Dried Squid"; "Stone"; "Rice Cracker".

Public Class Work: Teacher ends the lesson

The teacher says, "I want to know the present situation. People who are done with group one's? Two's? Three's? Four's? Up to where did you get? Group five's? Okay, there are a lot of people using triangles. That's okay, but there were three types of auxiliary lines. There are other easier methods of solving...using other types of auxiliary lines. We will check these in the next period."



3 minutes



15 minutes

2 minutes