Problem 13. \(\triangle ABC\) is isosceles triangle, |AC|=|BC|. \(\angle C=36^\circ\) and AD is the angle bisector. Prove that \(\triangle BDA\) and \(\triangle ACD\) are isosceles triangles.

Problem 16. \(\triangle ABC\) is isosceles triangle, |AC|=|BC|. D and E are the midpoints of the sides AC and BC. Prove that DE \parallel AB.

Problem 17. Segments AC and BD intersect at the point M and M is the midpoint of both segments. Prove that lines AB and CD are parallel.

Problem 18. Point M is the midpoint of a segment with endpoints on two parallel lines. AB is another segment passing through M with endpoints on the same two lines. Prove that M is also the midpoint of AB.

Problem 20. Let lines n and m are parallel. Prove that if points A and B are on the line n, then the distance from the point A to the line m is equal to the distance from the point B to the line m. In other words points on the line n are equidistant.

Problem 25. Assume lines \(a\) and \(b\) are parallel and a line \(c\) intersects \(a\). Prove that \(c\) intersects \(b\).

Last Theorems and axioms that we learned.

5. Axioms about parallel lines.
1. Through a given point it is always possible to draw only one line parallel to a given line.

Theorem 20 (1.4.6 from the book). The three angles in a triangle sum up to 180°.

Definition: Exterior angle of a triangle is formed when one of the sides is extended.

Theorem 21: The exterior angle at A is equal to the sum of the two remote interior angles.

Theorem 22.(AAS) If two angles and a side of one triangle are equal to the corresponding parts of another triangle, then triangles are congruent.

Theorem 18. If the corresponding (alternate interior) angles are equal, then the lines AC and BD are parallel.

Theorem 19. If lines AC and BD are parallel, then the corresponding (alternate interior) angles are equal.

Theorem 23.(HL) If the hypotenuse and a leg of one right triangle are equal to the corresponding parts of another right triangle, then the triangles are congruent.