

Congruence and Similarity, Exercises

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This is an easy example written in L^AT_EX

1 Using lists

1. In the isosceles triangle $\triangle ABC$ the sides $BA = BC$. Enter points D and E on AC such that $AD = CE$. Show that $BD = BE$.
2. In the isosceles triangle $\triangle ABC$ the sides that are equal are AB and AC . Extend the sides AB and AC to the points D and E respectively such that $BD = CE$.
 - (a) Show that $\triangle ABE \cong \triangle ACD$.
 - (b) Show that $\triangle BCD \cong \triangle CBE$.
 - (c) Show that $\angle ABC = \angle ACB$.
3. *from SMT*¹

The three straight lines l , m , n are parallel. The distance between l and m is 4, the distance between m and n is 3 and m lies between l and n . A square, which lies in the region between l and n , has three of its vertices on one of each lines. Find the length of the sides of the square.

¹Skolornas Matematiktävling

2 Using the environment exercise

Exercise 1. In the isosceles triangle $\triangle ABC$ the sides $BA = BC$. Enter points D and E on AC such that $AD = CE$. Show that $BD = BE$.

Exercise 2. In the isosceles triangle $\triangle ABC$ the sides that are equal are AB and AC . Extend the sides AB and AC to the points D and E respectively such that $BD = CE$.

- Show that $\triangle ABE \cong \triangle ACD$.
- Show that $\triangle BCD \cong \triangle CBE$.
- Show that $\angle ABC = \angle ACB$.

Exercise 3. *from SMT*

The three straight lines l, m, n are parallel. The distance between l and m is 4, the distance between m and n is 3 and m lies between l and n . A square, which lies in the region between l and n , has three of its vertices on one of each lines. Find the length of the sides of the square.