Draw the Star of David: Overlapping Triangle Construction

Original tasks 1, 2 / independent work

Task 1

A student draws two centered equilateral triangles with side length 4 cm. The top apex is 3.5 cm above center C. Where should the bottom apex be for symmetry, and what is the correct center-to-apex distance for side 4 cm? Distinguish it from the triangle altitude.

Task 2

For two centered equilateral triangles with side length 8.66 cm, a student measures the six outer-point distances from center C as 5.0, 5.1, 4.9, 5.0, 5.2, and 5.0 cm. Using a chosen tolerance of ±0.2 cm, do the measurements pass the radius check?

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Original tasks 3, 4 / independent work

Task 3

A student's first triangle has side length 5 cm and altitude 4.3 cm. The second triangle has side length 5 cm but altitude 4.0 cm. What is the likely mistake, and how can it be fixed?

Task 4

Describe how to check that the second triangle is rotated exactly 180 degrees from the first, using only a ruler and the drawn lines.