Draw a Ferris Wheel: Spoke Layout and Capsule Ring

Original tasks 1, 2 / independent work

Task 1

A wheel has 16 capsules. Calculate the angle gap between adjacent capsule attachment points. Then state how many marks appear in one quadrant from the top vertical line to the horizontal line, including both endpoints.

Task 2

A student uses a rim radius of 10 cm and makes each capsule 1.5 cm wide. Using the hypothetical convention that capsule width is about one-eighth of the rim radius, is 1.5 cm a reasonable width? Show the arithmetic.

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Original tasks 3, 4 / independent work

Task 3

A drawing has 12 spokes, but the student marked 13 capsule positions around the rim. What is the most likely error, and how can they check it using angle arithmetic?

Task 4

A capsule at the top of the wheel is drawn 2 cm tall and 1 cm wide. A capsule at the right side is drawn 1 cm tall and 2 cm wide. Using the radial alignment convention, explain whether these two capsules are consistent, and state what should be checked.