Draw a Pie: Crust, Filling, and Slice Construction

Topic reference / ordinary illustration



Ordinary topic reference. Hypothetical dimensions in the four tasks are supplied in their own text; this illustration is not their measured answer.

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Worked example / complete source key

A pie dish is drawn with a major axis of 12 cm and a minor axis of 4 cm. The rim width is 0.5 cm. What is the outer rim major axis length, and how many equal crimp segments of about 1.5 cm arc length fit along the outer rim? Use hypothetical values and simple arithmetic.

Answer: Outer major axis = 12 + 2(0.5) = 13 cm. Outer minor axis = 4 + 2(0.5) = 5 cm. Using a rough ellipse perimeter estimate $P \approx \pi[3(a+b) - \text{sqrt}((3a+b)(a+3b))]$ with $a = 6.5$ cm and $b = 2.5$ cm gives $P \approx 29.3$ cm. Dividing by 1.5 cm gives about 19.5, so choose 18 or 20 equal segments; 18 gives about 1.63 cm per segment and 20 gives about 1.47 cm per segment. Both are valid if spacing is even.