



SOLVING GEOMETRIC PROBLEMS RELATED TO MAKING ONLY WITH THE HELP OF A CIRCLE

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Annotation:

Only with the help of a circle can it be impossible to draw a continuous straight line passing through two points, but it will be possible to make a point (of any density) as long as the one lying on this straight edge wants.

In circular geometry, a straight line and cross-section cannot represent a straight line drawn using a ruler. Therefore, making a straight line ends up finding its two points.

Take these designations:

(A,B) is a straight line passing through point A and point B;

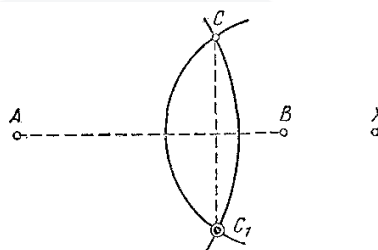
[AB] – AB kesma;

- Distance between points A and B;

(O,r) is a circle or circle with center O, radius r;

Issue 1. Find a symmetric image of a given point C with respect to a given straight line AB.

Make. We pass (a, AC AC |) and (B, BC BC.) circles. They intersect at point c1. This point is the sought point. If Point C belongs to a straight line, this point is called self-symmetric.



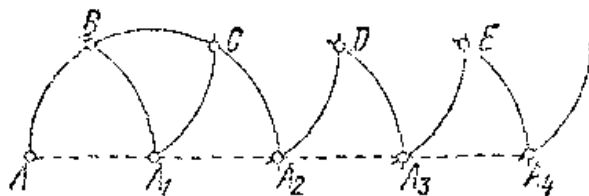
Note. To verify that points a, B and X lie on the same straight line, the issue of finding some point above and its symmetric image is used. For Point X AB to lie in a straight line, the Equality $|CX| = |c1x|$ must be appropriate.

Issue 2. Make a cut that is n (n-natural number) times larger than a given cut.

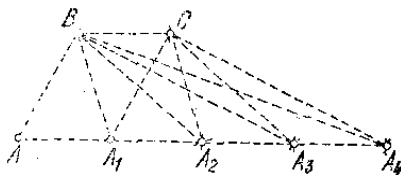
Method 1. The work done here is done using a circle of constant radius. (A1, r) we pass a circle and make a diametrically opposite point A2. In the same Yusin, we draw circles (a, R), (B,r), and (C, R) sequentially. From the points where these circles (A1,R) intersect with the circle, we form points B, C and A2. After that, we move the circle (A2,R), which crosses the Circle (C, R) at Point D. Hoil point A3 from the intersection



of circles (A_2, r) and (D, R) . The Aa_3 cross section is 3 times larger than the R cross section to Beryl.



Method 2. We get any point B from outside the Aa_1 straight line and make circles $(A_1, |AB|)$ and (B, R) . The point at which they intersect is Point C . Then when we draw (A_1, R) and $(C, |A_1B|)$ they intersect at the sought point A_2 . $|Aa_2| = 2R$. The circles (A_2, r) and $(C, |A_2B|)$ and their intersection point are denoted by A_3 . Where $|AA_3| = 3R$. Thus continuation can produce a cross section of $n AA_1$.



Draw 3

Note. The $ABCA_1$, a_1bca , a_2bca_3 , ... four angles formed here are parallelograms.

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