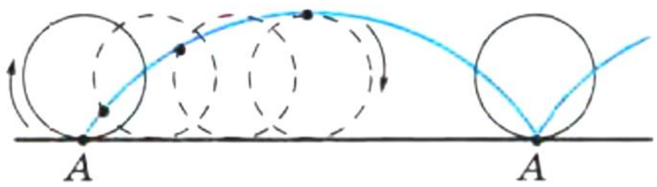
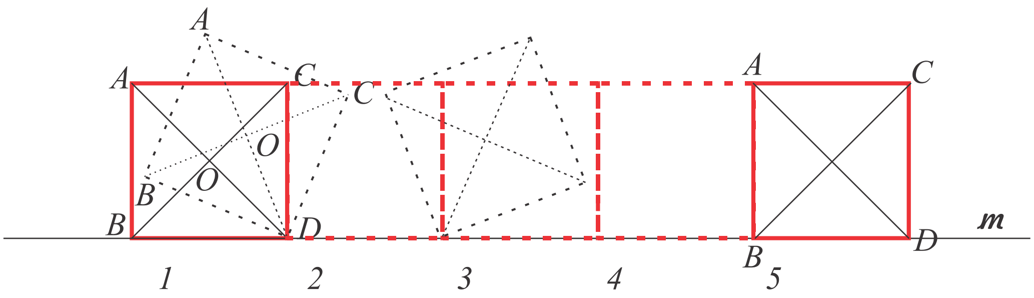
Classwork 19.

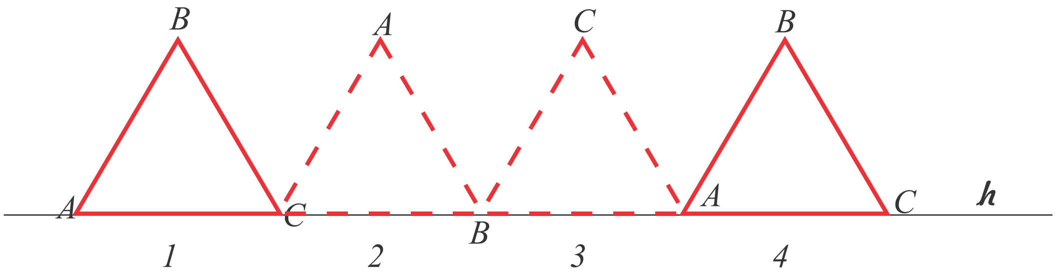
Circle is running along the line. At a starting time, point A was the point of contact of the circle and the line. The curve which point A will trace is called cycloid.



What line the center of the circle will trace? That is why the wheel is round. The center of the wheel goes parallel to the surface.

Imagine the “square wheel” – a square which is staying on a road. Draw a line traced by the point B (vertex) in a process of “rolling”? The diagonals’ intersection?

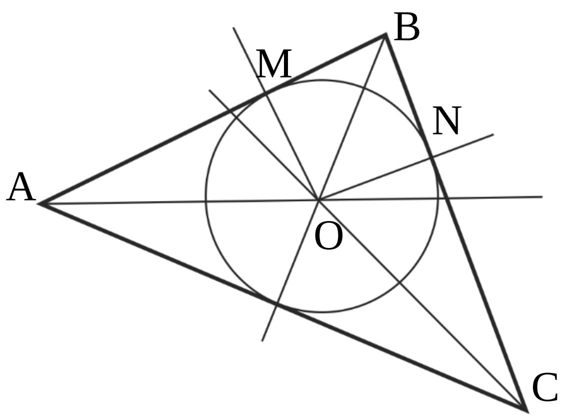




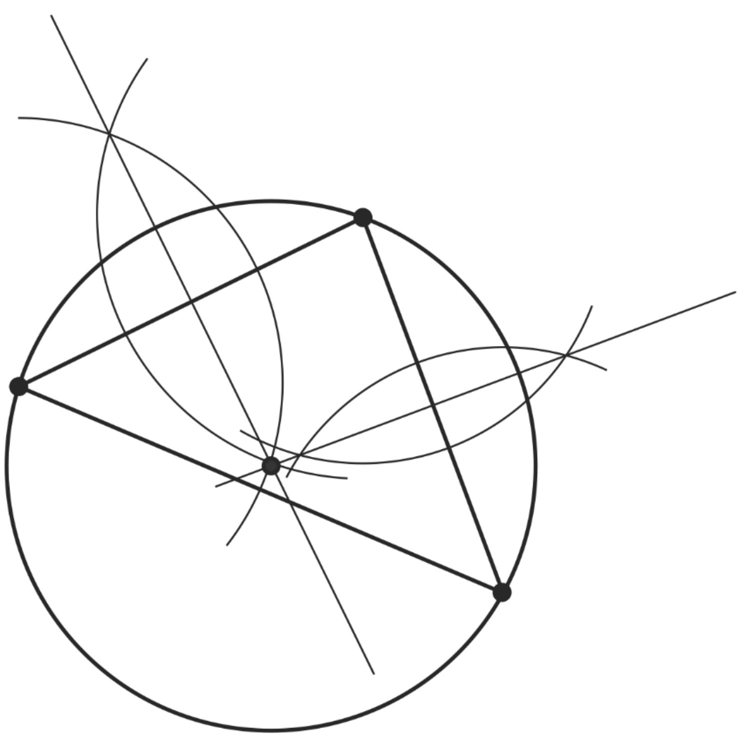
[Grab your reader’s attention with a great quote from the document or use this space to emphasize a key point. To place this text box anywhere on the page, just drag it.]

Inscribed and circumscribed circle of a triangle.

How the center of a circle can be found?



The center of the inscribed circle of a tringle is at the intersection of its bisectors: Triangles OMB and ONB are congruent, side OB is common, angles ∠MBO and ∠NBO are equal, angles of the tangent lines and radii are right angles.



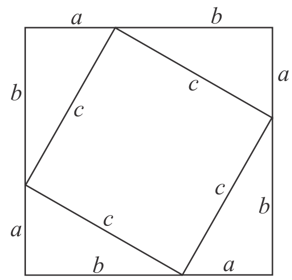
The Center of the circumscribed circle is at the intersection of the perpendiculars to midpoints of the sides of the triangles.

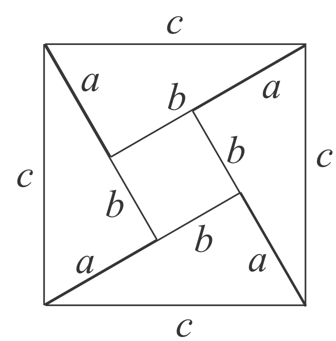
Pyphagorian theorem.

4 identical right triangles are arranged as shown on the picture. He area of the big square is $S = (a+b)\cdot(a+b) = (a+b)^2$, the are of the small square is $s = c^2$. The area of 4 triangles is $4\cdot\frac{1}{2}ab = 2ab$. But also cab be represented as $S - s = 2ab$

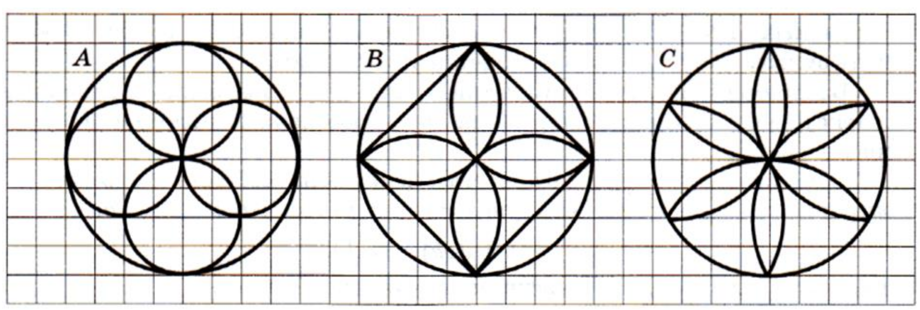
$2ab = (a+b)\cdot(a+b) - c^2 = a^2 + 2ab + b^2 - c^2$

$\Rightarrow \qquad a^2 + b^2 = c^2$





1. A quoter glides around another quoter. How many times the second quoter will turn around its center?
2. Copy the picture, use compass:



3. John knows that he can walk in the field with the speed 4 km/h and in the forest with the speed 2 km/h. He decided to show on the map all places where he can go in 1 hour. Help him to do it! (map is 1:100000, the river is narrow, he doesn't need time to cross it)