

## Geometry 1e – Practice

6th class – 21.10.2025.

1. Determine the equation of the circle that is tangent to the line  $2x + y = 3$  and its center is  $O(-3, -2)$ .
2. Determine the equation of the circle that is tangent to the ordinate axis, passing through  $P(6, 2\sqrt{3})$ , and its radius is 4 unit.
3. Determine the locus of points, from which  $x^2 + y^2 = 16$  circle subtends right angle.
4. The center of a circle lies on the line  $x - y = 7$ . It passes through both  $A(2, -1)$  and  $B(2, -7)$ . Determine the area of the regular triangle that can be inscribed in the circle.
5. Determine the locus of points, from which the length of the tangents, drawn to circles  $c_1: x^2 + y^2 = 4$  and  $c_2: (x - 4)^2 + (y - 5)^2 = 9$ , are equal.
6. The leg of a right triangle is the line  $x = 9$ , and the vertex, opposite to this leg is  $B(5, -3)$ . The hypotenuse is parallel to  $3x - 4y = 0$ . Determine the equation of the circumscribed circle.
7. Determine the equation of the line that passes through  $A(3, 6)$  and its distance to  $(3, 0)$  is 2.
8. Evaluate the distance of  $P(-1, 3)$  to the line  $4x - 3y = 12$ .
9. Prove that the orthocenter  $O$ , the median  $M$  and the circumcenter  $C_c$  lie on the same line, called Euler line. Furthermore, the  $|OM| = 2|MC_c|$ .