

## Geometry 1e – Practice

4th class – 07.10.2025.

1. In  $ABC_{\Delta}$ ,  $A(-2, -1)$ ,  $B(6, -3)$  and  $C(2, 5)$ . Determine the coordinates of the
  - a. centroid
  - b. orthocenter
  - c. circumcenter
  - d. incenter\*
2. What is the value of  $a$ , if  $ax - y = 2$  and  $x - ay + 3a + 1 = 0$  intersect each other on  $y = 2x$ ?
3. In  $ABC_{\Delta}$ ,  $A(-3, -1)$ , the altitude and median lines through  $C$  have the equations  $2x + y = 3$  and  $x - y = 1$ , respectively. Determine the missing vertices.
4. \* In  $ABC_{\Delta}$ ,  $A(0, 3)$ ,  $B(6, 0)$  and  $C(6, 4)$ . Determine the equation of the line that is parallel to  $x - 4y = 0$  and divides the triangle into two parts that have equal area.
5. In  $ABC_{\Delta}$  we know that  $AC: 3x - 10y + 8 = 0$ ,  $m_a: x + 14y + 20 = 0$ ,  $m_c: 5x - 8y = 4$ . Determine  $m_b$  and the vertices of the triangle.
6. Give the distance of a given line  $l(P_0(x_0, y_0), \underline{n}(A, B))$  to a given point  $P(x, y)$ .