

Zadatak 5. Točke $A_1(3, 2)$, $B_1(-1, 3)$ i $C_1(1, -2)$ polovišta su stranica \overline{BC} , \overline{AC} i \overline{AB} trokuta ABC . Odredi koordinate vrhova A , B i C tog trokuta.

Rješenje.

$$\overline{BC} \implies A_1(3, 2) = \left(\frac{x_B + x_C}{2}, \frac{y_B + y_C}{2} \right)$$

$$\overline{AC} \implies B_1(-1, 3) = \left(\frac{x_A + x_C}{2}, \frac{y_A + y_C}{2} \right)$$

$$\overline{AB} \implies C_1(1, -2) = \left(\frac{x_A + x_B}{2}, \frac{y_A + y_B}{2} \right)$$

$$\frac{x_B + x_C}{2} = 3 / \cdot 2$$

$$\frac{y_B + y_C}{2} = 2 / \cdot 2$$

$$\frac{x_A + x_C}{2} = -1 / \cdot 2$$

$$\frac{y_A + y_C}{2} = 3 / \cdot 2$$

$$\frac{x_A + x_B}{2} = 1 / \cdot 2$$

$$\frac{y_A + y_B}{2} = -2 / \cdot 2$$

$$x_B + x_C = 6$$

$$y_B + y_C = 4$$

$$x_A + x_C = -2$$

$$y_B + y_C = 6$$

$$x_A + x_B = 2$$

$$y_A + y_B = -4$$

$$x_C = 6 - x_B$$

$$y_C = 4 - y_B$$

$$x_C - x_B = -4$$

$$y_C - y_B = 10$$

$$6 - x_B - x_B = -4$$

$$4 - y_B - y_B = 10$$

$$-2x_B = -10 \implies x_B = 5$$

$$-2y_B = 6 \implies y_B = -3$$

$$x_C = 6 - 5 = 1$$

$$y_C = 4 + 3 = 7$$

$$x_A + 1 = -2 \implies x_A = -3$$

$$y_A - 3 = -4 \implies y_A = -1$$

$$A(-3, -1)$$

$$B(5, -3)$$

$$C(1, 7)$$