

**Zadatak 6.** Točke  $B(1, -2)$  i  $C(3, 2)$  vrhovi su paralelograma  $ABCD$ , a točka  $S\left(-\frac{1}{2}, \frac{3}{2}\right)$  sjecište je njegovih dijagonala. Odredi vrhove  $A$  i  $D$  ovog paralelograma.

**Rješenje.**

$$A(x_A, y_A),$$

$$B(1, -2),$$

$$S\left(-\frac{1}{2}, \frac{3}{2}\right),$$

$$C(3, 2),$$

$$D(x_D, y_D),$$

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$$A, D = ?$$

$$\vec{AS} = \vec{SC}$$

$$\left(-\frac{1}{2} - x_A\right)\vec{i} + \left(\frac{3}{2} - y_A\right)\vec{j} = \left(3 + \frac{1}{2}\right)\vec{i} + \left(2 - \frac{3}{2}\right)\vec{j}$$

$$\left(-\frac{1}{2} - x_A\right)\vec{i} + \left(\frac{3}{2} - y_A\right)\vec{j} = \frac{7}{2}\vec{i} + \frac{1}{2}\vec{j}$$

$$-\frac{1}{2} - x_A = \frac{7}{2} \implies x_A = -4$$

$$\frac{3}{2} - y_A = \frac{1}{2} \implies y_A = 1$$

$$\implies A(-4, 1)$$

$$\vec{BS} = \vec{SD}$$

$$\left(-\frac{1}{2} - 1\right)\vec{i} + \left(\frac{3}{2} + 2\right)\vec{j} = \left(x_D + \frac{1}{2}\right)\vec{i} + \left(y_D - \frac{3}{2}\right)\vec{j}$$

$$-\frac{3}{2}\vec{i} + \frac{7}{2}\vec{j} = \left(x_D + \frac{1}{2}\right)\vec{i} + \left(y_D - \frac{3}{2}\right)\vec{j}$$

$$-\frac{3}{2} = x_D + \frac{1}{2} \implies x_D = -2$$

$$\frac{7}{2} = y_D - \frac{3}{2} \implies y_D = 5$$

$$\implies D(-2, 5)$$