

Soluții

$$\mathbf{1.a)} \left. \begin{array}{l} \overrightarrow{AF} + \overrightarrow{FE} = \overrightarrow{AE} \\ \overrightarrow{BC} = \overrightarrow{FE} \end{array} \right\} \Rightarrow \overrightarrow{AF} + \overrightarrow{BC} = \overrightarrow{AE}$$

$$\mathbf{1.b)} \overrightarrow{AB} \text{ are coordonatele } (1; -4) \Rightarrow |\overrightarrow{AB}| = \sqrt{1+16} = \sqrt{17}.$$

$$\mathbf{2.a)} \sigma[ABC] = \frac{AB \cdot AC \cdot \sin A}{2} = \frac{2 \cdot 3 \cdot \sin(180^\circ - 135^\circ)}{2} = \frac{3\sqrt{2}}{2}.$$

$$\mathbf{2.b)} \frac{AB}{\sin C} = \frac{BC}{\sin A} \Leftrightarrow \sin C = \frac{AB \cdot \sin A}{BC} = \frac{6 \cdot \frac{\sqrt{3}}{2}}{3\sqrt{3}} = 1 \Rightarrow m(\sphericalangle C) = 90^\circ.$$

$$AB^2 = AC^2 + BC^2 \Rightarrow AC = \sqrt{36 - 27} = 3.$$

$$\mathbf{3.a)} AB = \sqrt{(x_B - x_A)^2 + (y_B - y_A)^2} = \sqrt{4} = 2.$$

$$m_{AC} = 1. \text{ Fie } BA' \perp AC, A' \in [AC].$$

$$\mathbf{3.b)} AA': \frac{y-3}{x} = -1 \Leftrightarrow AA': x + y - 3 = 0.$$