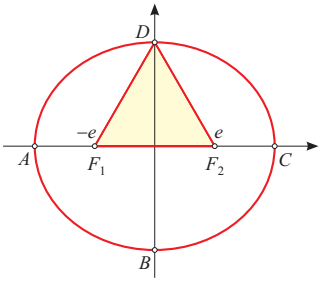
Zadatak 10. Žarišta elipse $b^2x^2 + a^2y^2 = a^2b^2$ i jedno njezino tjeme vrhovi su jednakostraničnog trokuta površine $9\sqrt{3}$. Odredi jednadžbu elipse.

Rješenje.

$$P_{\triangle} = 9\sqrt{3}$$



$$2e = a$$

$$P = 9\sqrt{3}$$

$$\frac{a^2\sqrt{3}}{4} = 9\sqrt{3} \quad / : \sqrt{3} / \cdot 4$$

$$a^2 = 36 \implies a = 6$$

$$2e = 6 \implies e = 3$$

$$b^2 = a^2 - e^2 = 36 - 9 = 27$$

$$b^2x^2 + a^2y^2 = a^2b^2$$

$$27x^2 + 36y^2 = 27 \cdot 36 \quad / : 36 \cdot 27$$

$$\frac{x^2}{36} + \frac{y^2}{27} = 1$$