Zadatak 59. Kolika je površina četverokuta kojem su vrhovi sjecišta elipse $4(x-1)^2+15y^2=64$ s koordinatnim osima.

Rješenje.

$$4(x-1)^2+15y^2=64 \quad / : 64$$

$$\frac{(x-1)^2}{16}+\frac{y^2}{\frac{64}{15}}=1 \implies \boxed{C(1,0)}, \quad \boxed{a=4}, \quad \boxed{b=\frac{8}{\sqrt{15}}}$$

$x=0 \ \ldots \ 4+15y^2=64$

$$15y^2=60 \quad / : 15$$

$$y^2=4$$

$$y=\pm 2 \implies \boxed{T_1(0,-2)}, \quad \boxed{T_2(0,2)}$$

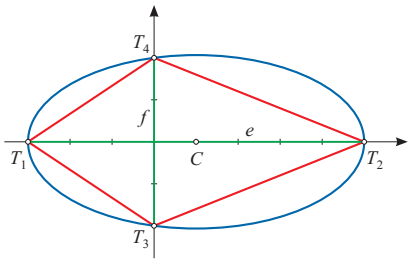
$y=0 \ \ldots \ 4(x-1)^2=64 \quad / : 4$

$$(x-1)^2=16$$

$$x-1=\pm 4$$

$$x_1=-4+1=-3$$

$$x_2=4+1=5 \implies \boxed{T_3(-3,0)}, \quad \boxed{T_4(5,0)}$$



Četverokut je deltoid s okomitim dijagonalama duljine $e=2a=8$, $f=2+2=4$ pa je:

$$P=\frac{ef}{2}=\frac{8\cdot 4}{2}=16$$