

ANALIZA MATEMATYCZNA 3. LISTA 11 –  $\varepsilon$  dodatkowa; autotrening przed k5

1. Połącz w 'rozsądne' trójki: rysunek **(x)**  $\langle \sim \rangle$  całka **[y]**  $\langle \sim \rangle$  całka **(Z)**

Wypisz wszystkie możliwe.

[1]  $\int_0^6 \int_0^{\sqrt{6y-y^2}} f(x, y) dx dy$

[2]  $\iint_{\substack{x^2+y^2 \leq 6y \\ x \geq 0}} f(x, y) d\omega$

[3]  $\iiint_{\substack{x^2+y^2+z^2 \leq 9 \\ x+|y| \leq 0}} f(x, y, z) d\omega$

[4]  $\int_0^3 \int_0^x f(x, y) dy dx$

[5]  $\int_0^5 \int_{5-\sqrt{25-y^2}}^y f(x, y) dx dy$

[6]  $\int_{-3}^3 \int_{x^2+y^2 \leq 9-z^2} \int_{x+|y| \leq 0} f(x, y, z) d\omega dz$

[7]  $\int_0^5 \int_x^{\sqrt{10x-x^2}} f(x, y) dy dx$

[8]  $\iint_{\substack{x^2+y^2 \leq 4 \\ |x| \leq y}} f(x, y) d\omega$

(A)  $\int_{-3}^3 \int_{3\pi/4}^{5\pi/4} \int_0^{\sqrt{9-h^2}} f(r \cos \varphi, r \sin \varphi, h) \cdot r dr d\varphi dh$

(B)  $\int_0^{5\sqrt{2}} \int_{\pi/4}^{\arccos \frac{r}{10}} f(r \cos \varphi, r \sin \varphi) \cdot r d\varphi dr$

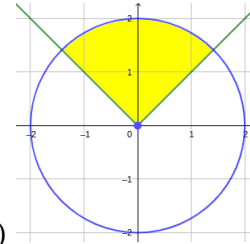
(C)  $\int_0^{\pi/4} \int_0^{3/\cos \varphi} f(r \cos \varphi, r \sin \varphi) \cdot r dr d\varphi$

(D)  $\int_{3\pi/4}^{5\pi/4} \int_0^3 \int_{-\sqrt{9-r^2}}^{\sqrt{9-r^2}} f(r \cos \varphi, r \sin \varphi, h) \cdot r dh dr d\varphi$

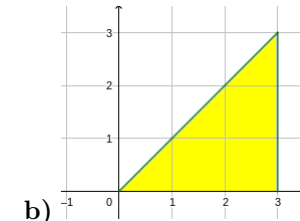
(E)  $\int_0^{\pi/2} \int_0^{6 \sin \varphi} f(r \cos \varphi, r \sin \varphi) \cdot r dr d\varphi$

(F)  $\int_{\pi/4}^{3\pi/4} \int_0^2 f(r \cos \varphi, r \sin \varphi) \cdot r dr d\varphi$

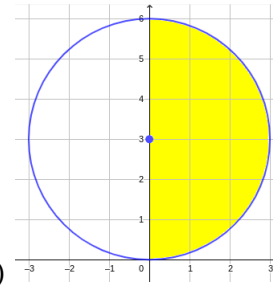
(G)  $\int_{\pi/4}^{\pi/2} \int_0^{10 \cos \varphi} f(r \cos \varphi, r \sin \varphi) \cdot r dr d\varphi$



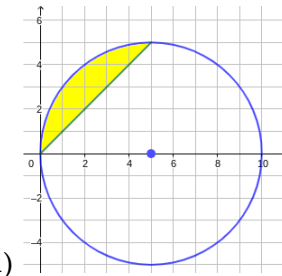
a)



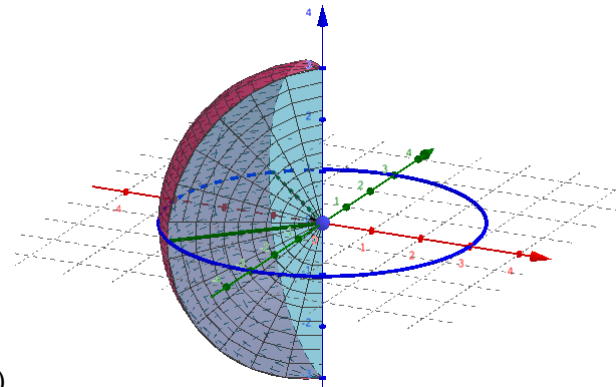
b)



c)



d)



e)