W poniższych zadaniach policzyć całki: $\int_C \vec{F} \circ d\vec{r}$

Zad. 1 $\vec{F}(x,y,z) = (y+z, x+z, x+y)$,

$C = \{(x,y,z) : x = t,\ y = t^2,\ z = t^3,\ \text{gdzie } 0 \le t \le 1\}$

Zad. 2 $\vec{F}(x,y,z) = (z, x, y)$,

$C = \left\{(x,y,z) : x = \sin t,\ y = 3\sin t,\ z = \sin^2 t,\ 0 \le t \le \frac{\pi}{2}\right\}$.

Zad. 3 $\vec{F}(x,y,z) = (x,y,z)$,

$C = \{(x,y,z) : x = t^2,\ y = 4t+1,\ z = t-1,\ 1 \le t \le 4\}$.

Zad. 4 $\vec{F}(x,y,z) = (yz, -xz, xy)$,

$C = \{(x,y,z) : x = e^t,\ y = e^{3t},\ z = e^{-t},\ 0 \le t \le 1\}$.

Zad. 5 $\vec{F}(x,y) = (x^2+y^2, -x)$,

$C = \{(x,y) : y = \sqrt{1-x^2},\ 0 \le x \le 1\}$.

Zad. 6 $\vec{F}(x,y) = (y^2 - 2xy, y^2 - 2xy)$,

$C = \{(x,y) : y = 1 - |1-x|,\ 0 \le x \le 2\}$.

Zad. 7 $\vec{F}(x,y,z) = (3x^2, 2xz - y, z)$

$C = \{(x,y,z) : y = \frac{1}{4}x^2,\ z = \frac{3}{8}x^3,\ 0 \le x \le 2\}$.