

Homework -exercises 11.-12.1.2024

To get points from these exercises do them at home before the second exercise session of the week and at the beginning of the class mark them on the list.

Usually there is three homework problems, but on the first week there is only one problem.

1. Let's investigate circular helix curve $\mathbf{r}(t) = (2 \cos t, 2 \sin t, t)$ between points $(2, 0, 0)$ and $(2, 0, 4\pi)$.
 - (a) Make some kind of sketch of the curve (you can use program like Geogebra or sketch by hand).
 - (b) What is the value of t at the point $(2, 0, 0)$? What about at the point $(2, 0, 4\pi)$?
 - (c) Calculate $\mathbf{r}'(t)$. What does it describe geometrically?
 - (d) Calculate the length of this circular helix between points $(2, 0, 0)$ and $(2, 0, 4\pi)$.