

Student's name:

Information Technology: Final exam 12.02.2016

Question 1

Write Octave function that for given point $P(x,y)$ return number of the quarter of coordinate plane into which the point falls, or 0 (zero) if it is located on any axis.

Question 2

Write Octave function that calculates the angle between the sides of N-sided regular polygon.

Question 3

The coordinates of N points in plane are saved in matrix $M_{2 \times N}$. The first row correspond to x coordinates the second one to y coordinates. Write a function that given such matrix M will return the distance to a point located most far away from the origin of coordinate system.

Question 4

Write a program that keeps reading numbers from user until the sum of them is greater than 1000. Before exit the program should print the average of the numbers given by the user.

Question 5

Write a function that for two vectors \vec{a} and \vec{b} where $\vec{a}, \vec{b} \in R^2$, returns two other vectors: $3\vec{a} + \vec{b}$ and $2\vec{b} - \vec{a}$.

Question 6

Write a function that for a given vector returns its versor (unit vector).