Python puzzles

1. Using the dot product and trial and error, find two vectors with an angle of 20° between them.
2. Graph the line that the vector $\begin{bmatrix} 3 \\ 1 \end{bmatrix}$ lies along.
3. Write some Python code that returns True if two vectors are parallel and False if they're not.
4. Write some Python code that computes the dot product of two vectors if they're the same length, and returns "These vectors aren't the same length!" if they're not.
5. Write a Python program that inputs a vector and outputs the unit vector pointing in the same direction.
6. Write a Python program that inputs a 3×3 matrix and outputs the matrix with the second and third rows swapped.