Question 1 (1 point)

Which of the statements below are correct for PCA?
(choose all that apply)

- [ ] PCA dictates how many dimensions need to be retained
- [x] PCA relies on the calculation of eigenvectors and eigenvalues
- [ ] the PCA output describes the significance of each of the original features
- [x] PCA is a dimensionality reduction technique
- [x] PCA in a 5-dimensional space can create exactly 5 new features.

Question 2 (1 point)

A SVM draws lines, planes or hyper-planes in the features' space. As a result, it can only treat problems that are linearly separable in the original space.

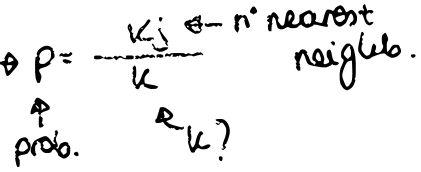
- ( ) True
- (x) False

Question 3 (1 point)

Consider a classification problem where there are 2 classes. Class "A" contains 26 unique instances, while class "B" contains 5 unique instances.

What is a suitable value for "*k*" of a *k*-NN classifier that can correctly classify new instances?

- ( ) Any value of *k* equal to, or greater than 5 is suitable.
- (x) We don't have enough information to define *k*
- ( ) *k*=2
- ( ) Any value of *k* between 5 and 26 (including 5 and 26) is suitable.
- ( ) *k*=5



Question 4 (1 point)

Please rate the following approaches to Relative Pose Estimation in terms of expected accuracy.

(1 being best and 3 worst)

1 ⌄ 3	1. 3D to 3D
3 ⌄ 2	2. 3D to 2D
2 ⌄ 1	3. 2D to 2D

Question 5 (1 point)

Concerning Relative Pose Estimation, please match the problem to the solution

2 3D to 2D Relative Pose Estimation	1. ICP
1 3D to 3D Relative Pose Estimation	2. PnP
3 2D to 2D Relative Pose Estimation	3. Essential Matrix

Question 6 (1 point)

Assume that you just run a PnP solver with:

- some 3D points in World Coordinates and,
- The same points in the Image Coordinate of your current camera pose.

The result was:
rvec = [-0.05, -1.51, -0.00]
tvec = [87.39, -2.25, -24.89]

Assuming that you perform stereo reconstruction on the camera you get an **interest point P** in location X,Y,Z = [-6.71, 0.23, 21.59] in camera coordinates.

What would be the the location of the **interest point P** in world coordinates?

- ◯ 96.75, 40.71, -1.98
- ◯ 40.71, -1.98, 96.75
- ◯ 96.75, -1.98, 40.71
- ◯ -1.98, 96.75, 40.71