Assignment 2a

The due date for submitting this assignment has passed. Due on 2018-02-07, 23:59 IST.

Submitted assignment

1) All 3 vertices of a triangle went through rotation and translation in 2 dimensions, then how many degree of freedoms will be there
   - 1
   - 2
   - 3
   - 6

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   3

2) All 3 vertices of a triangle went through rotation and translation in 3 dimensions, then how many degree of freedoms will be there
   - 2
   - 4
   - 3
   - 6

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   6

3) In 2D linear transformations, the value of transformation matrix \[
\begin{pmatrix}
m_{11} & m_{12} \\
m_{21} & m_{22}
\end{pmatrix}
\] is given as
\[
\begin{pmatrix}
-1 & 0 \\
0 & -1
\end{pmatrix}
\]. Find out the effect on the system.
   - Rotated by 2\pi
   - Rotated by \pi
   - Translated by same length
   - None of the above

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   Rotated by \pi

4) In the above question if the value of transformation matrix is given as
\[
\begin{pmatrix}
2 & 0 \\
0 & 2
\end{pmatrix}
\], then find out the effect on the transformation.
   - No effect
5) **Quaternions are the best representation of 3D rotation, it is represented as**

\[ q = (a, b, c, d) \in \mathbb{R}^4 \text{ where } a^2 + b^2 + c^2 + d^2 = 1 \]

if the quaternions are given as \( q = (0, 0, 0, 1) \), then find out the nature of the rotation.

- Roll by \( \pi \)
- Pitch by \( \pi \)
- Yaw by \( \pi \)
- None of the above

**No, the answer is incorrect.**

**Score:** 0

**Accepted Answers:**

- Scaling(stretch)

6) **In the above question if the value of quaternions are given as** \( q = \left( \frac{1}{\sqrt{2}}, 0, \frac{1}{\sqrt{2}}, 0 \right) \). Then find out the nature of the rotation.

- Pitch by \( \frac{\pi}{2} \)
- Yaw by \( \frac{\pi}{2} \)
- Roll by \( \frac{\pi}{2} \)
- None of the above

**No, the answer is incorrect.**

**Score:** 0

**Accepted Answers:**

- Yaw by \( \frac{\pi}{2} \)