Perspective Projection

5 questions

1 point

1.

Assume you are given a line represented in the form $2x + 2y - 2\sqrt{2} = 0$. Which set of parameters (ρ, θ) gives the same line represented in the form $\rho = x\cos\theta + y\sin\theta$:

- $(1, 45^o)$
- $(1, 30^o)$
- $(2, 45^o)$
- $(-2, 60^o)$

1 point

2.

The distance of a line to the origin is $\rho = 3$ and the norm direction of the line is $\theta = \pi/4$. Which of the following is/are valid equations for the line?

- $x + y - 3\sqrt{2} = 0$
- $x + y - 3 = 0$
- $\sqrt{2}x - \sqrt{2}y - 3 = 0$
- $\sqrt{2}x + \sqrt{2}y - 3 = 0$

1 point

3.

What is the equation of the line passing through points with homogeneous coordinates $(1, 2, 1)$ and $(-1, 3, 1)$?

- $-2x - y + 5 = 0$
- $x + y + 10 = 0$
- $2x + 4y - 10 = 0$
- $-2x + y + 5 = 0$

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4.

The lines $l_1 = (1, 1, 0)$ and $l_2 = (-1, 1, 1)$ instersect at the point with homogeneous coordinates:

- $(0.5, -0.5, 1)$
- $(-0.5, -0.5, 1)$
- $(1, 1, 1)$
- $(1, -1, 1)$

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1 point

5.

Consider the lines $y = 1$ and $y = 2$ in the projective space. What is the point of intersection?

- [ ] They do not intersect.
- [ ] $(1, 0, 0)$
- [ ] $(-1, 0, 0)$

- [ ] $(0, 1, 0)$

3 questions unanswered

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