Homogeneous Coordinates

5 questions

1 point

1.

The homogeneous coordinates of a point P are $(1, 2, 1)$. Which of the following (homogeneous) coordinates represent the same point?

- [x] $(1, 2, 0)$
- [ ] $(1, 1, 2)$
- [x] $(2, 4, 2)$
- [x] $(-0.5, -1, -0.5)$

1 point

2.

Given a square ABCD, with $A = (0, 0, 1)$ and $C = (1, 1, 1)$, the equation of the diagonal BD in $\mathbb{P}^2$ has the form $l^T x = 0$ with l equal to

Clarification: For this and following questions, we use $\mathbb{P}^2$ to denote the real projective plane.

- ( ) $(-1, 2, 1)$
- ( ) $(-1, 1, 1)$
- ( ) $(1, -1, 1)$
- ( ) $(-1, -1, 1)$

1 point

3.

Determine the equation of the line in $\mathbb{P}^2$ through the points $(a, 0, 1)$ and $(0, b, 1)$.

- $\begin{pmatrix} b \\ a \\ ab \end{pmatrix}$
- $\begin{pmatrix} ab \\ a \\ b \end{pmatrix}$
- $\begin{pmatrix} -b \\ -a \\ ab \end{pmatrix}$
- $\begin{pmatrix} ab \\ -a \\ b \end{pmatrix}$

1 point

4.

Determine the equation of the line in $\mathbb{P}^2$ through the points (a, b, c) and $(d, e, 0)$.

- $\begin{pmatrix} ad \\ be \\ 0 \end{pmatrix}$
- $\begin{pmatrix} -ce \\ cd \\ ae - bd \end{pmatrix}$
- $\begin{pmatrix} ce \\ cd \\ ae + bd \end{pmatrix}$
- $\begin{pmatrix} ce \\ cd \\ ae - bd \end{pmatrix}$

1 point

5.

Determine the equation of the line in $\mathbb{P}^2$ through the points $(a, b, 0)$ and $(d, e, 0)$.

- $\begin{pmatrix} 0 \\ 0 \\ ae - bd \end{pmatrix}$
- $\begin{pmatrix} ad \\ be \\ 0 \end{pmatrix}$
- $\begin{pmatrix} ae \\ 0 \\ bd \end{pmatrix}$
- $\begin{pmatrix} 0 \\ 0 \\ ae + bd \end{pmatrix}$

4 questions unanswered

Submit Quiz