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CST-310

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Topic 1 Lab Question 1

A matrix is an n x m array of scalars that represent a system linear transformations and systems. The determinant is a scalar that is taken from an n x n matrix that determines its solvability by indicating whether it is invertible. Vectors are an n x 1 matrix that is used to represent the x,y,z plane in our case but can be infinitely long and represent positions and variables for most systems. Linear transformations are mappings that preserve vector addition and scalar multiplication, transforming one matrix into the basis of another matrix. The dot product indicates how aligned two vectors are while the cross product results in the perpendicular vector in our three dimensional space. Eigenvalues and their vectors are used to diagonalize an overdetermined system as well as finding the behavior of linear transformations. And finally the Bezier curve allows for the creation of smooth and scalable curves in animation and modeling (however we never reached this in our math course).