8/28/2019

35.5

(a) The determinant is the area of the transformation matrix M after each of the vectors making it up have been passed through it.

(b) As I understand it, the "span" of a vector v is the line composed of all overlaps of cv where c is a scalar.

(c) It must be true to satisfy that $(A - \lambda I)\begin{bmatrix} x_1 \\ b_1 \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$.

(d) We know that the ~~determinant of~~

$$\det(M - \lambda I) = a\lambda^2 + b\lambda + c,$$

and that for λ to be a eigenvalue it must satisfy $a\lambda^2 + b\lambda + c = 0$; by the quadratic formula, there must always be at least one imaginary solution for λ in this equation.

(e) The "eigenbasis" as discussed in the video, ~~is~~ seems to be ~~another by which the original transformation~~ the matrix resulting from applying a change in perspective, the original matrix, and then an inverse change in perspective.