

Math 220 Assignment

October 22, 2001

Due Wednesday, October 24

Let M be an $m \times n$ matrix, and let f denote the corresponding linear function from \mathbf{R}^n to \mathbf{R}^m .

1. Which of the following sets related to M are preserved under arbitrary (finite) sequences of elementary row operations?
 - (a) The set of linear combinations of the columns of M .
 - (b) The set of linear combinations of the rows of M .
 - (c) The set of linear relations among the columns of M .
 - (d) The set of linear relations among the rows of M .
2. Which of the sets enumerated in the previous exercise have straightforward interpretations in terms of the linear map f ?

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<http://math.albany.edu:8000/math/pers/hammond/course/mat220/assgt/1a011022.html>