QUIZ October 30, 2013

Clicker Instructions: A = True; B = False;
C = I don't know; D = No truth value
correct = 1pt; don't know = 0pt; wrong = 0pt

1. If a matrix has 8 columns, and exactly 3 of them are pivot columns, then it has exactly 5 non-pivot columns.
2. If an 11×8 matrix has rank 3, then its nullspace is of dimension 5.
3. If an 8×11 matrix has rank 3, then the nullspace of its transpose is of dimension 5.
4. Let A be a matrix whose reduced echelon form is:
$$B = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 2 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{bmatrix}.$$
A basis for the columnspace of A is given by its first, second and fourth columns.
5. Let A be a matrix whose reduced echelon form is:
$$B = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 2 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{bmatrix}.$$
A basis for the rowspace of A is given by its first, second and third rows.
6. Let A be a matrix whose reduced echelon form is:
$$B = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 2 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{bmatrix}.$$
A basis for the nullspace of A is given by the first three columns of B.
7. For any matrix A, the rowspace of A^T is equal to the rowspace of A.