

To receive credit you MUST SHOW ALL YOUR WORK.

1. (10 pts) Given

$$A = \begin{pmatrix} 1 & 2 & -2 & 1 \\ 3 & 6 & -5 & 4 \\ 1 & 2 & 0 & 3 \end{pmatrix}$$

find a basis for the row space, a basis for the column space and a basis for the null space of A .

2. (10 pts) Let W be the subspace of P_4 of all polynomials of degree at most 3 such that $p(0) = 0$, and let U be the subspace of P_4 of all polynomials of degree at most 3 such that $p(1) = 0$. Find a basis for W , a basis for U , and a basis for their intersection $W \cap U$.