

SECTION 2.3.2: DIMENSION

1. **Theorem 2.4** If V has a finite basis, then

All the questions below reference the vector space V with dimension n .

2. Let S be a set of linearly independent vectors from V . What can you say about the size of S and why?
3. Let S be a set of vectors from V such that $\text{span}(S) = V$. What can you say about the size of S and why?
4. Let S be a set of linearly independent vectors from V . Can you expand S into a basis? How?
5. Let S be a set of vectors from V such that $\text{span}(S) = V$. Can you construct a basis from S ? How?
6. Assume S has exactly n vectors in it. What is the *least amount of work needed* to show S is a basis of V and why?