1.6

9.



10

(d)



11.





17.

when each independent element of upper triangle part is determined, the others are determined.

so each element of a basis would be as follows.

the values of one pair of dependent elements(one in upper triangle, the other in lower triangle whose positions are symmetric) are set as 1 and -1 respectively and the others are 0.

there should be at least and at most one this kind of matrix for each dependent pair.

so the dimension would be (n-1)n/2

20.

(a)



(b)

as in a, if S generates V but still have less than n vectors, a basis which is linearly independent and also a subset of V, should have cardinality less than n however, there should be a linearly independent subset of V whose cardinality is n which is a basis.

2.1

8.

Example 2



Example 3



9

(c)



(d)

