

The diag function has several uses, one of which is to take a vector as its input and create a square matrix with that vector on the diagonal. Create a 21-by-21 matrix with the sequence 10 to 0 to 11 (i.e., 11, 10, ... , 1, 0, 1, ..., 11).

| Code | Solution |
|--|---|
| x<-c(10:0,1:11) x diag(x, nrow=21, ncol=21) | > x<-c(10:0,1:11) > x [1] 10 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 10 11 > diag(x, nrow=21, ncol=21) [1,] 10 [2,] 0 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 [3,] 0 0 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 [4,] 0 0 0 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 [5,] 0 0 0 0 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 [6,] 0 0 0 0 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 [7,] 0 0 0 0 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 [8,] 0 0 0 0 0 0 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 [9,] 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 [10,] 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 [11,] 0 [12,] 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 [13,] 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0 0 0 0 [14,] 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 3 0 0 0 [15,] 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 4 0 0 [16,] 0 [17,] 0 [18,] 0 [19,] 0 [20,] 0 [21,] 0 [1,] 0 [2,] 0 [3,] 0 [4,] 0 [5,] 0 [6,] 0 [7,] 0 [8,] 0 [9,] 0 [10,] 0 [11,] 0 [12,] 0 [13,] 0 [14,] 0 [15,] 0 [16,] 5 0 [17,] 0 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 [18,] 0 0 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 [19,] 0 0 0 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 [20,] 0 0 0 0 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 [21,] 0 0 0 0 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |