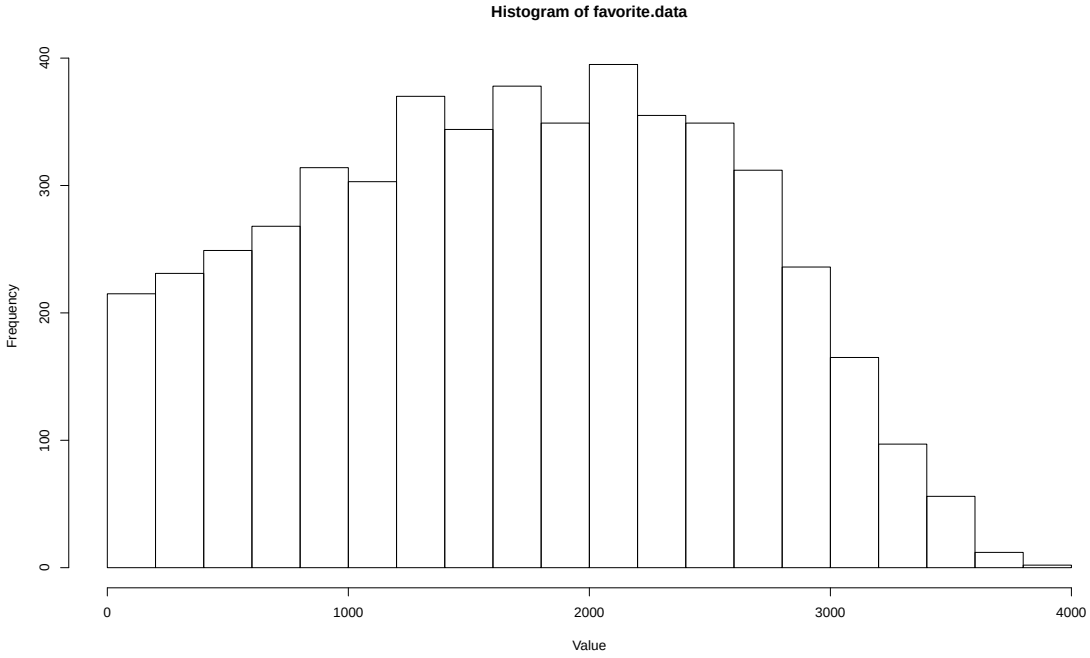

FIGURE 1. The histogram of favorite.data

1. PROBLEM 1

For the dataset given on Blackboard, the following summary statistics were calculated.

Statistic	Value
Mean	1688.51
Median	1706
Std. Dev	883.47
Max	3907
Min	2

The histogram for the dataset can be found in Figure 1

2. PROBLEM 2

We generate 10,000 random values from the standard normal distribution. The histogram of the values is shown below in Figure 2.

The following statistics were calculated.

3. PROBLEM 3

The two sequences specified in the problem were multiplied together. The requested elements can be found in the table below.

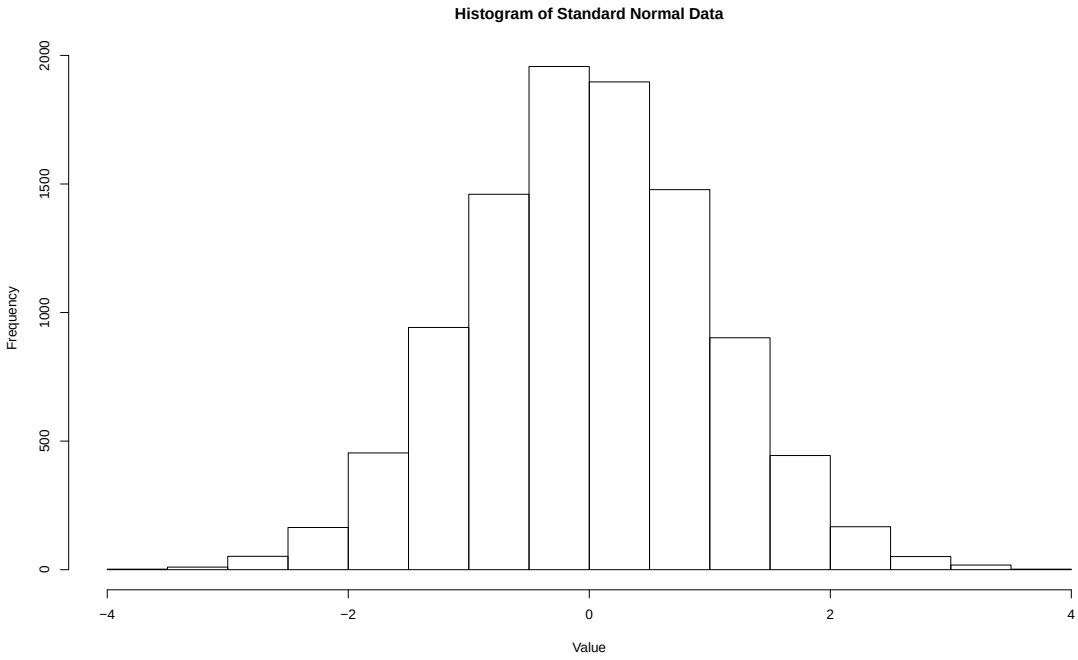

FIGURE 2. The histogram of 10,000 random standard normal data points

Statistic	Value
Mean	−0.0032
Median	−.00966
Std. Dev	1.00658

Element	Value
15	5475
16	5760
17	6035

All of the elements between 5 and 32 (inclusive) are greater than 2,000.
16 elements are greater than 6,000.

4. PROBLEM 4

The following table describes the results of summing all of the perfect squares between 1 and x.

x	Value
100	385
$100,000$	10568146

5. Problem 5

All of the perfect squares between 1 and 500 can be found in the table below (code with the vector object in the appendix).

	x
1	1.00
2	4.00
3	9.00
4	16.00
5	25.00
6	36.00
7	49.00
8	64.00
9	81.00
10	100.00
11	121.00
12	144.00
13	169.00
14	196.00
15	225.00
16	256.00
17	289.00
18	324.00
19	361.00
20	400.00
21	441.00
22	484.00

The 4 column matrix with all perfect squares between 1 and 100,000 can be found below (code in the appendix).

For the above matrix $\mathbf{X}$, $x_{15,3} = 29{,}929$.

	1	2	3	4
1	1.00	6400.00	25281.00	56644.00
2	4.00	6561.00	25600.00	57121.00
3	9.00	6724.00	25921.00	57600.00
4	16.00	6889.00	26244.00	58081.00
5	25.00	7056.00	26569.00	58564.00
6	36.00	7225.00	26896.00	59049.00
7	49.00	7396.00	27225.00	59536.00
8	64.00	7569.00	27556.00	60025.00
9	81.00	7744.00	27889.00	60516.00
10	100.00	7921.00	28224.00	61009.00
11	121.00	8100.00	28561.00	61504.00
12	144.00	8281.00	28900.00	62001.00
13	169.00	8464.00	29241.00	62500.00
14	196.00	8649.00	29584.00	63001.00
15	225.00	8836.00	29929.00	63504.00
16	256.00	9025.00	30276.00	64009.00
17	289.00	9216.00	30625.00	64516.00
18	324.00	9409.00	30976.00	65025.00
19	361.00	9604.00	31329.00	65536.00
20	400.00	9801.00	31684.00	66049.00
21	441.00	10000.00	32041.00	66564.00
22	484.00	10201.00	32400.00	67081.00
23	529.00	10404.00	32761.00	67600.00
24	576.00	10609.00	33124.00	68121.00
25	625.00	10816.00	33489.00	68644.00
26	676.00	11025.00	33856.00	69169.00
27	729.00	11236.00	34225.00	69696.00
28	784.00	11449.00	34596.00	70225.00
29	841.00	11664.00	34969.00	70756.00
30	900.00	11881.00	35344.00	71289.00
31	961.00	12100.00	35721.00	71824.00
32	1024.00	12321.00	36100.00	72361.00
33	1089.00	12544.00	36481.00	72900.00
34	1156.00	12769.00	36864.00	73441.00
35	1225.00	12996.00	37249.00	73984.00
36	1296.00	13225.00	37636.00	74529.00
37	1369.00	13456.00	38025.00	75076.00
38	1444.00	13689.00	38416.00	75625.00
39	1521.00	13924.00	38809.00	76176.00
40	1600.00	14161.00	39204.00	76729.00
41	1681.00	14400.00	39601.00	77284.00
42	1764.00	14641.00	40000.00	77841.00
43	1849.00	14884.00	40401.00	78400.00
44	1936.00	15129.00	40804.00	78961.00
45	2025.00	15376.00	41209.00	79524.00
46	2116.00	15625.00	41616.00	80089.00
47	2209.00	15876.00	42025.00	80656.00
48	2304.00	16129.00	42436.00	81225.00
49	2401.00	16384.00	42849.00	81796.00
50	2500.00	16641.00	43264.00	82369.00
51	2601.00	16900.00	43681.00	82944.00
52	2704.00	17161.00	44100.00	83521.00
53	2809.00	17424.00	44521.00	84100.00
54	2916.00	17689.00	44944.00	84681.00
55	3025.00	17956.00	45369.00	85264.00
56	3136.00	18225.00	45796.00	85849.00
57	3249.00	18496.00	46225.00	86436.00