Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Applied Discrete- The Nature of Sets Practice 1

1) Write each using roster notation. Do not include repeats.

a) A is the set of letters in the word *Alabama.*

b) R is the set of even natural numbers between 10 and 40.

c) M is the set of even natural numbers less than 8.

2) Write each set using the descriptive method.

a)

b)

c)

3) Write each set using set-builder notation.

a)

b) X is the set of natural numbers greater than 20

c)

4) List the elements in each set.

a)

b)

5) State whether each is true or false.

Let

a) b)

c)

6) State whether each set is infinite or finite.

a)

b)

c) K is the set of letters in the English Alphabet

d)

7) State whether each pair of sets is equal, equivalent, or neither.

a) and

b) and

c) and

8) Find the cardinal number for each set.

a)

b)

c)

d)

9) The table below shows the top 10 states in number of immigrants in 2006.

|  |  |  |
| --- | --- | --- |
| **State** | **Number of Immigrants** | **% of Total Immigrants to U.S.** |
| California | 264,677 | 20.9 |
| New York | 180,165 | 14.2 |
| Florida | 155,996 | 12.3 |
| Texas | 89,037 | 7.0 |
| New Jersey | 65,934 | 5.2 |
| Illinois | 52,459 | 4.1 |
| Virginia | 38,488 | 3.0 |
| Massachusetts | 35,560 | 2.8 |
| Georgia | 32,202 | 2.5 |
| Maryland | 30,204 | 2.4 |

a) List the set of states with more than 100,000 immigrants.

b) List the set of states in the top 10 with fewer than 50,000 immigrants.

c) List

d) List