**Lab for Section 2.5(a)** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Use good notation and show appropriate work. Write explanations in* ***complete sentences***.

1. (a)  (b) 275% of 24 (c) 4.8% of what number is 4.6848?

2. List all of the four element subsets of *I* = {*x* | *x* is a letter in *initiate*}.

3. Christmas shoppers that had purchased a gift in the first week of December were surveyed; fifty-seven said they purchased the gift in a store. Twenty-five said they shopped both online and in stores. Three purchased a gift from another source such as a flea-market, but not from a store or online. If ninety shoppers were surveyed, how many shopped only online?

*U*

*S*

*O*

4. Use the following information to fill out the Venn Diagram.
 *n*(*U*) = 26, *n*(*B* – *C*) = 4, *n*(*C* – *B*) = 9, *n*(*A* ∩ *B* ∩ *C*) = 3,
 *n*(*B* ∪ *C*) = 22, *n*(*A* – *C*) = 7, *n*(*A* ∩ *B*) = 7, *n*(*A* ∩ *C*) = 5.

*U*

*A*

*B*

*C*

5. In a survey regarding vacation interests, the following data were collected:

17 said that nature hikes and tourism sites were important;

7 said only educational activities were important;

18 said tourist sites but not nature hikes were important;

28 said that nature hikes and educational activities were important;

23 said that nature hikes or tourism sites were important, but not educational activities;

43 said that nature hikes were important;

13 said that nature hikes, tourism sites, and educational activities were important; and

6 said that none of the three choices were important.

*U*

*N*

*T*

*E*

 (a) Find the number of people surveyed.

 (b) How many surveyed thought educational activities were important?

 (c) How many surveyed thought only tourism sites would be important?

(d) How many surveyed said educational activities or nature hikes were important?

6. Let *A* = {*x* : *x* is an even natural number between 7 and 13} and *B* = {*x* : *x* is a natural number multiple of 4 less than 16}. Write the solutions to the following problems in roster form using proper set notation.

(a) *A* × *B* (b) (*B – A)* × *A*