**6.1 Sets and Set Operations – Guided Notes Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_**

set –

Ex 1) months beginning with the letter J

Roster Notation:

Set Builder Notation:

Ex 2) whole numbers between 7 and 11 (inclusive)

Roster Notation:

Set Builder notation:

element –

* January is an element of set A
* Notation:

Two sets are \_\_\_\_\_\_\_\_\_\_\_\_ if and only if the exact same elements are in both sets.

A is a subset of B if \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Notation:

If A is smaller than B, then it is also a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of B.

Notation:

The union of A and B is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Notation:

The intersection of A and B is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Notation:

Ex 3) Let A = {1, 2, 3} and B = {1, 3, 5}.

A ∪ B =

A ∩ B =

The empty set is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Notation:

Sets A and B are disjoint if and only if \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a subset of every set set!

The universal set is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Notation:

Ex 4) the day of the week

U =

The complement of a set A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Notation:

Let U = the days of the week and A = {M, W, F}, then Ac =

Ex 5) List all subsets of {a, b, c}.

Ex 6) Let U = set of all senators in Congress, D = {x ∈U │ x is a Democrat}, R = {x ∈U │ x is a Republican}, and F = {x ∈U │ x is a female}. Write each of the following in words. Then Draw a Venn Diagram for each.

1. D ∩ F
2. R ∪ F
3. D ∩ Fc
4. F ∪ Rc