

Week 1 Geometry Assignment:

Day 1: p. 5 #1-24

Day 2: p. 8 #1-19, 21-25

Day 3: pp. 11-13 #1-22, 25-29 [34-38]*

Day 4: pp. 19-20 #1-25

Day 5: Read section 1.5

* Cumulative Review problem #'s adjusted for 3rd edition books

Notes on Assignment:

Page 5:

Work to show:

#1-20: Answers only is fine.

#21-24: Draw the Venn diagram and then the universal set as $U = \{ \text{elements} \}$

#6-10: If a set is equal, it will automatically be equivalent, so you do not have to write both. Just write equal.

#11-20: Write these using symbols.

#21-24: Draw the Venn diagram and write the elements in the correct circles. For the universal set you are to figure out what the universal set would be if it included more of the same type of elements. So, for #22, for example, all of the elements are names of states, so write that the universal set is $U = \{ \text{states} \}$ or $U = \{ x \mid x \text{ is a state} \}$

Page 8:

Work to show:

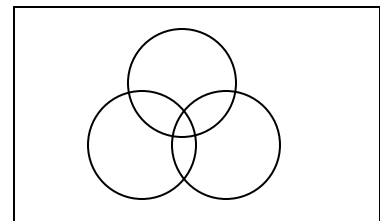
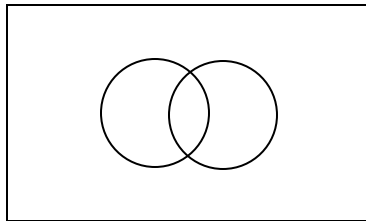
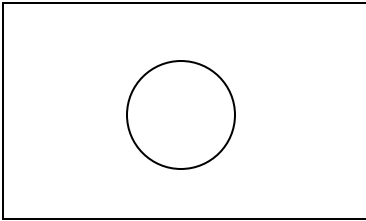
#All problems: Draw the Venn diagram, do the shading, and then list the elements of the answer in $\{ \quad \}$

Example Problem: Let $K = \{1, 3, 6, 9, 12\}$, $L = \{2, 4, 6, 8, 10\}$, and $M = \{1, 4, 8, 12\}$
(These are the same sets that are used for problems 3-19.)

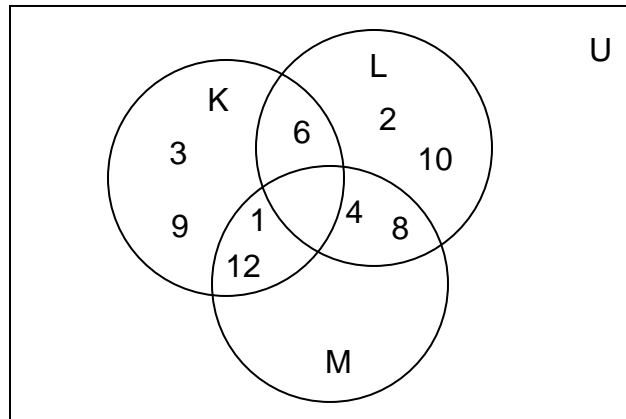
Find $(K \cup M) \cap L$.

Solution: First draw the Venn diagram. Go ahead and draw the circles intersecting right away. Some of the intersecting areas might be empty, but that's ok. Start with the basic, empty Venn diagram.

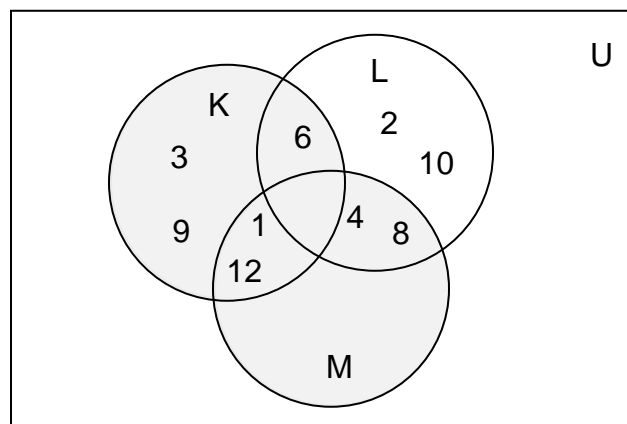
The basic Venn diagrams for 1, 2, and 3 sets are:



For our problem, since it has 3 sets, use the 3rd diagram. Next, put the numbers and labels on the diagram:

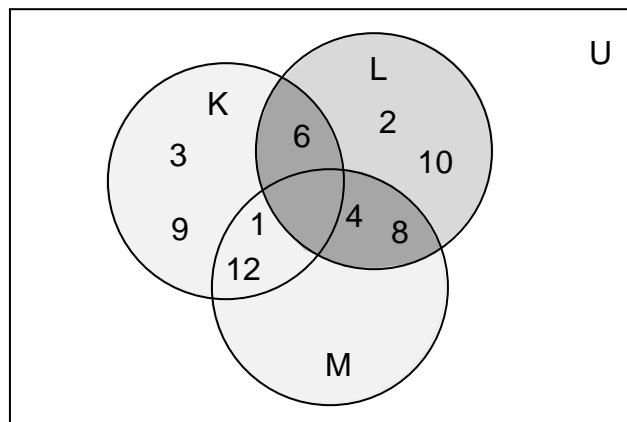


Now do what is in () first. $(K \cup M)$ Means “union” so shade both circles K and M.



Now we have to take that answer and find its intersection with L. Since “intersection” means “overlap” we will shade circle L and see where it overlaps with what is already shaded.

The part that is shaded by both shadings is that dark gray part. That is the answer. Therefore, the answer to $(K \cup M) \cap L$ is $\{4, 6, 8\}$.



The other problems are done the same way.

#3-13: Remember that for unions, use the same writing utensil and shade both sets. For intersections, use 2 writing utensils to shade each set. Your answer will be where the shading overlaps. Do what is in parentheses first!

#8: Remember that a set's complement is everything **not** in the set, so shade everything outside your circle for L.

#14: Find the union first. Then your final answer will be everything that is **not** shaded as part of the union.

#16: You need to find the intersection, so shade each part and see where the shading overlaps. Shade circle L and then shade everything **not** in circle M.

#18-19: You may want to draw one Venn diagram for each set of parentheses and then on a 3rd Venn diagram union the 2 solutions from the other 2.

Pages 11-13:

Work to show:

#All problems: Answers only is fine.

#19-22: Look these up in a dictionary if you need to.

Cumulative Review: Use the following concepts (and their symbols) for your answers: equal, complements, intersecting, disjoint, proper subset.

Pages 19-20:

Work to show:

#All problems: Answers only is fine.

#6-14: A plane is either named by a lower-cased letter, or by three points that lie in the plane. In this drawing, each plane has a lower-cased letter in the corner that gives the name of the plane.

#19: Logic is valid reasoning – step-by-step thinking that brings us to a conclusion.

#23: Remember the difference between equal and equivalent.

Read Section 1.5

This is a tough section to understand for some, so I would like it to be read before we discuss it next week.