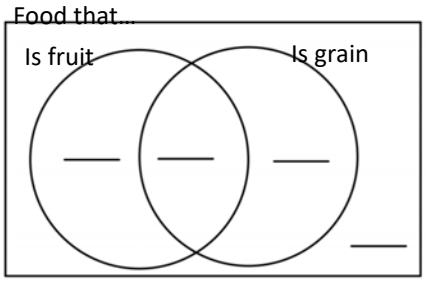
Set review problems:

I. You should practice and make sure you understand the process of coming up with examples of sets that could intersect (like assignment 1 problem 4).

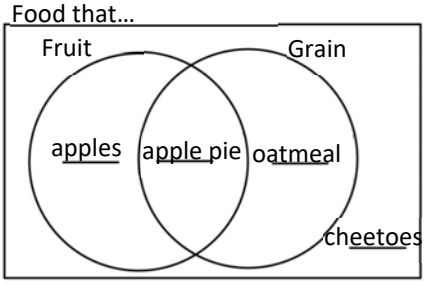
What is wrong or missing with each of these answers?

a.



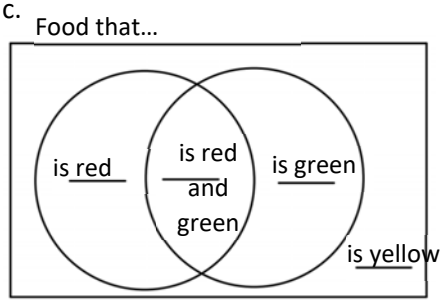
Missing examples. Also, there is no possible overlap (if it was food that **includes** fruit and **includes** grain, that wouldn't be a problem)

b.



Closest to correct. If the set names were **has** or **includes** fruit/grain, that would work pretty good. Without those words I'm going to assume the verb intended is **is** (apple pie isn't a fruit and isn't a grain but it includes fruit and grain). Cheetoes are not a grain or a fruit, but they include grain, so if the verb is **has,** then a different example is needed

c.

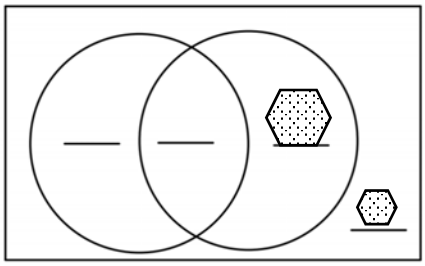


No set names. The things in the example sections look kind of like set names, but can't have separate set names for an intersection or an "outside"—that has to be defined by the overlap and the outside of the sets that are named.

II. Solve a problem about possible set names given some examples, like assignment 2 problems 2, 3 and 4.

Given that the possible set names are: big, small, triangle, square, hexagon, striped, solid or dotted (and there are elements with all possible combinations).

A. If you know where these two elements go:



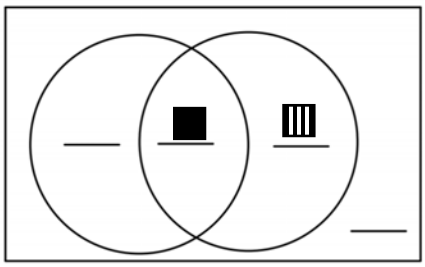
a. What can you say about the name for the right set? (What are the possible set names? Why?)

Because of the element in the right set, we know that the set name has to be hexagon or large or dotted. Because there is a dotted hexagon outside, we know that dotted and hexagon can't be names for the right set, so the right set has to be **large**

b. What can you say about the name for the left set? What are the possible set names? Why?

The left set **can't be large** (because that's already taken by the right set), and we can probably say the set name **can't be small** (because of the small hexagon that's not in the left set). The left set **can't be hexagon or dotted** (dotted hexagons not in the left set). **It could be square or triangle or solid or striped.**

B.



a. What can you say about the name for the left set? (What are the possible set names? Why?)

The one on the left has to be square or small or solid (because of the small solid square in it). There's another small square outside the left set, so the left set can't be small or square. The left set **has to be solid**.

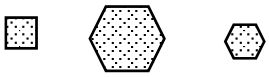
b. What can you say about the name for the left set? What are the possible set names? Why?

The right set has to be square or small or striped. (because of the right example)

It also has to be square or small or square or solid (because of the left example)

So that means it has to be **small or square** (properties that both shapes have in common)

c. Which of these shapes would be the best to try next? Why?



We want to figure out if the left set is small or square.

If the left set was small, the small square would be inside it

If the left set was square, the small square would be inside it.

The small square doesn't help us decide.

If we try the large hexagon

If the left set was small, then the large hexagon would be outside it

If the set was square, then the large hexagon would be outside it

The large hexagon doesn't help us decide

If we try the small hexagon

If the left set was small, then the small hexagon would be inside it

If the left set was square then the small hexagon would be outside it

The small hexagon will let us figure out whether the left set is square or small, so it's the best choice.

III. Solve puzzles about sets.

A. There are 24 boys in 8^{th} grade. 9 boys play baseball 7 boys do not play either football or baseball How many boys play football but not baseball? Answer: 8	B. 290 of the people at the waterpark went on the slides 325 of the people went in the wave pool 125of the people went in the wave pool but not the water slides 50 people went in neither the wave pool nor the water slides. How many people were at the water park? Answer: 465

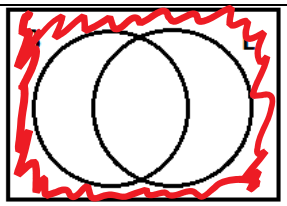
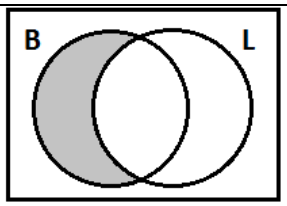
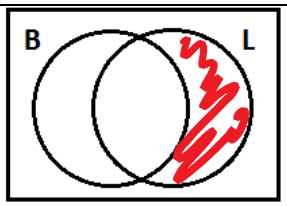
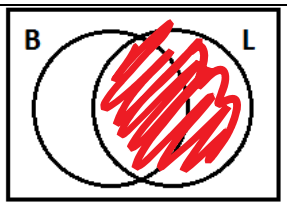
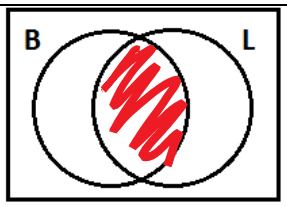
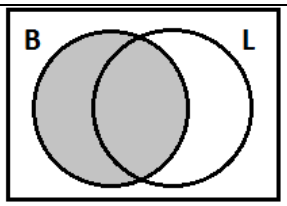
IV. Write sentences, shade Venn diagrams and write set notation given information in one of the forms

Fill in the missing parts of the table where:

The universe is bracelets

B is the set of bracelets that are (mostly) blue

L is the set of bracelets with more than 15 beads

Sentence/phrase	set notation	shaded Venn diagram
1. Bracelets that are neither blue nor have more than 15 beads	$\overline{B \cup L}$	
2. Bracelets that are blue and do not have more than 15 beads Or Bracelets that are blue and have at most 15 beads	$B - L$ or $B \cap \overline{L}$	
3. Bracelets that are blue or have more than 15 beads.	$B \cup L$	
5. Bracelets that have more than 15 beads and are not blue	$L \cap \overline{B}$	
6. Bracelets that have more than 15 beads	L	
7. Blue bracelets that have more than 15 beads.	$B \cap L$	
8. Blue bracelets	B	
9. Bracelets that do not have more than 15 beads Or Bracelets that have at most 15 beads	$\overline{L}$