8. [4 pts] Name the mathematical concept we use in determining that there are usually more chairs in this room than there are people, and explain in 2-3 sentences how we use it. ("Counting" is not an acceptable answer.)

One-to-one correspondence.
We notice that the chairs + people are paired — 1 chair for 1 person — with chairs left over.

9. Consider this Venn diagram:

(a) [3 pts] Fully describe objects in Region III.
They are pizzas with no onion; no pepperoni; + no extra cheese.

(b) [3 pts] In which region(s) could you put pizzas that have onion but no pepperoni?

\[ \text{VII or VIII} \]

(c) [5 pts] There are 6 pizzas that only have pepperoni, none in Region V, and just as many in Region II as in Region IV. If there are 20 pepperoni pizzas, how many have pepperoni but no extra cheese? Show work, but you need not explain.

\[ 6 + 10 = 14 \]