**CAN WE SWIM YET?**



The Johnson family is excited to swim in their new pool!

There are three water pipes that the pool company can use to fill the swimming pool for the Johnson family.

* **Hose A alone takes 8 hours to fill the pool.**
* **Hose B alone takes 24 hours to fill the pool.**
* **Hose C alone takes 12 hours to fill the pool.**

1. Which hose should they choose so that they can swim as soon as possible? Why?
2. If they can choose TWO hoses to run at the same time, which two should they select? Why? After 1 hour, what portion of the pool is filled?
3. If the pool company runs all three hoses at the same time, how long will it take for the pool to be full?

* Be sure to SHOW YOUR THINKING!
* Be ready to share your work with your classmates!
* Be prepared to question the work of others ☺
* Be PRECISE with your work!

Possible solution path:

1. Hose A because it can fill the entire pool in the least amount of time.
2. Hose A and Hose C together, because they are the two pipes that can (individually) fill the pool in the least amount of time.

Since Hose A fills the entire pool in 8 hours, then in 1 hour it would fill of the pool.

Since Hose C fills the entire pool in 12 hours, then in 1 hour it would fill of the pool.

So, if they are using BOTH Hose A and Hose C, then in hour + of the pool would be full.

+ =

+ = of the pool would be full

1. If all 3 hoses are running, then in one hour:

+ + of the pool would be full.

Therefore, + + = or of the pool would be full.

If of the pool would be full in one hour, then it would take

4 hours for the pool to be completely full.