Announcements

'Self grade & reflection due Wed (more on this in class)

Honor Code Discussion: TLDR: It's important. Make sure you know it now so no problems later.

Self Grade & Reflection

Rubric:

Validity: logic OK?
Readability: Easy to read?
Concise: More complicated than needs to be?

Provide a point score for each category →

\[
\begin{align*}
V &= x \\
R &= y \\
C &= z
\end{align*}
\]

Sample self-grade Activity...

Also

• Reflection - see resources on website for worksheet
• Where to find solutions - CANVAS, "Files"
• Timing - ~30 min (at most 1 hour)
**Induction**

- Step 1: Show how to get from $k$ to $k+1$ rung
- Step 2: Show how to get on lowest rung

- Used to prove correctness of recursive algorithms where problem size decreases by 1 in recursion.
- In Divide & Conquer if size goes from $n \to \frac{n}{2}$, instead, let $2^m = n$, then problem size decreases from $2^m \to 2^{m-1}$ in recursion. So do induction on $m$, not $n$!

**Better for Divide & Conquer:**

**Strong Induction**

- Step 1: Show how to get on 1st rung
- Step 2: Show how to get to $k^{th}$ rung if all rungs $k$ such that $n > k^2$ base are attainable

If subproblems are not always exactly a factor of 2 smaller, this approach is better. Only need to show subproblem is smaller than $n$, but larger than the base case.