## MA111: Contemporary mathematics

Schedule:

- Mini-Exam 4 is in class, Thu Dec 4th, 2014
- Exam 4 is Tue Dec 16th, 2014 from 3:30pm to 5:30pm

Today we practice

# Crawford's Emergency Gift Todo List

#### • Let's work out an example:

Task	Duration	Need to finish first
M: Go to mall	30 min	Shovel driveway, research
R: Research gift ideas	20 min	Nothing
D: Shovel driveway	15 min	Nothing
W: Select wrapping paper	20 min	Go to mall
1: Get gifts from first store	20 min	Go to mall
2: Get gifts from second store	20 min	Go to mall
C: Get gift certificate	5 min	Research gift ideas
H: Go home	30 min	Wrapping paper, first store, second store
P: Wrap presents	20 min	Go home
S: Wear grandma's favorite sweater	2 min	Nothing
G: Go to grandma's house	20 min	Wrap presents, Sweater
T: Place gifts under tree	2 min	Go to grandma's house

• Draw the graph (circles and lines) of tasks



- Label each task with its earliest start and finish times
- How fast can we finish if we have as many people/cars as we want?
- What is the latest we can start/finish each task in order to finish on time?
- Order the tasks by "float time"

### Another example

• Here is a different example, already drawn out.



• Add the early/late start/finish times

 $\underbrace{ \begin{array}{c} {}_{\rm early \; start} \\ {}_{\rm early \; done } \end{array} }_{\rm late \; done } I \\ \end{array} \\ }_{\rm late \; done }$ 

• Order the tasks by float time

### Important concepts

- Tasks have a duration
- Tasks have dependencies that must be done first
- The schedule lists the start time of each task
- Simplest way to schedule is a priority list- do them in this order
- Tuesday we used "shorter tasks get higher priority"
- Today we used "stricter start time tasks get higher priority"

We calculated the latest start time minus the earliest start time: the "slack" or "float" of a task