

## Dynamic Distillery – recursion

You have been put in charge of launching Dynamic Distillery’s new bourbon whiskey. There are 4 nonoverlapping phases: research, development, manufacturing system design, and initial production and distribution. Each phase can be conducted at two speeds: normal or priority. The times required (in months) to complete each phase at the two speeds are:

| Level    | Research | Development | Manufacturing System Design | Initial Production and Distribution |
|----------|----------|-------------|-----------------------------|-------------------------------------|
| Normal   | 4        | 3           | 5                           | 2                                   |
| Priority | 2        | 2           | 3                           | 1                                   |

The costs (in millions of \$) of completing each phase at the two speeds are:

| Level    | Research | Development | Manufacturing System Design | Initial Production and Distribution |
|----------|----------|-------------|-----------------------------|-------------------------------------|
| Normal   | 2        | 2           | 3                           | 1                                   |
| Priority | 3        | 3           | 4                           | 2                                   |

You have been given \$10 million to execute the launch as quickly as possible. Formulate this problem as a dynamic program by giving its recursive representation. Solve the dynamic program.