### Interpreting a Formula: PT vs. LMD vs. RMD



## Deriving Subformulas from a Parse Tree



## Labelled Transition System (LTS)

# $M = (S, \rightarrow, L), \text{ given } P$

#### Q. Formulate deadlock freedom:

From any state, it is always possible to make progress.

## Labelled Transition System (LTS)

**Exercises** Consider the system with a counter *c* with the following assumption:

 $0 \le \textit{C} \le 3$ 

Say *c* is initialized 0 and may be incremented (via a transition *inc*, enabled when c < 3) or decremented (via a transition *dec*, enabled when c > 0).

• **<u>Draw</u>** a *state graph* of this system.

• **Formulate** the state graph as an *LTS* (via a triple  $(S, \rightarrow, L)$ ). <u>Assume</u>: Set *P* of atoms is: {  $c \ge 1, c \le 1$  }



## Labelled Transition System (LTS): Formulation & Paths

