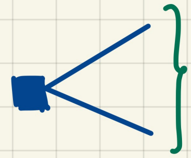
Real Options.

A real option is a right to make a business decision or to make an investment.

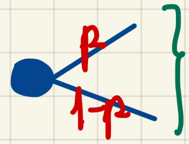
Example.
- Jasper Fforde: options on whether members of a royal family marry a member of another royal family
- options to make a film or a series based on a book.
- renewing a TV show for a season
- land: parking lot downtown: to build or not to build?

Real options are different from derivative securities (like calls and puts we usually talk about) since they don't have a tradeable underlying asset. So, there is no pricing by replication. Also, they are not usually traded themselves.

To valuate real options, we will use binary trees w/ two types of nodes:

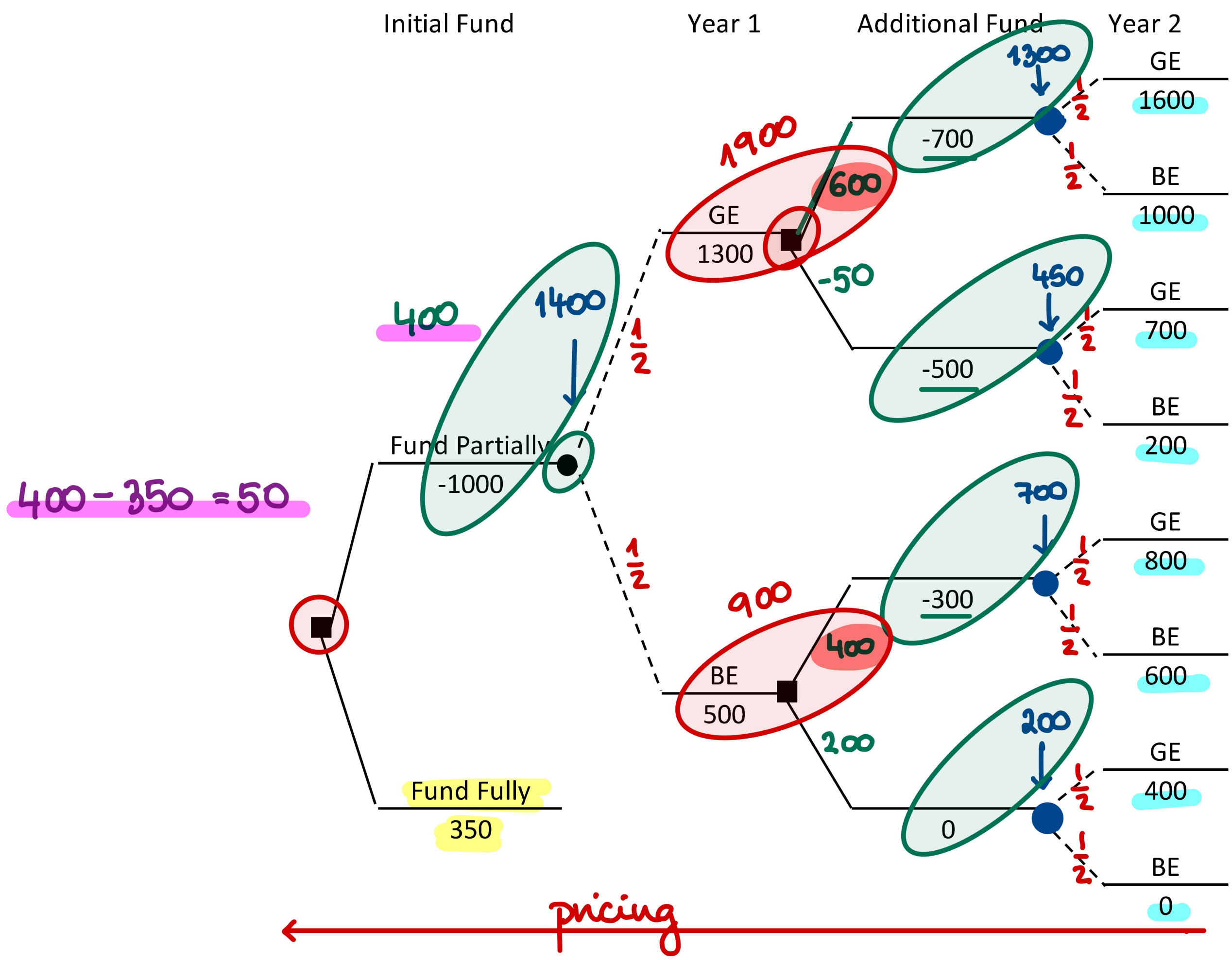
■ ... decision nodes  possible decisions

and

● ... information nodes 

different scenarios

28) Consider a two-year project that when fully funded at time 0 has a net present value of \$350. The decision tree below shows the cash flows of the project when partially funded at the beginning of the Year 1 (at $t = 0$) with an option to provide different amounts of funding at the beginning of Year 2 (at $t = 1$). This tree reflects two economic states (GE = good economy, BE = bad economy) in each of the two years. For a given year, each economic state has a 50% probability.



$\frac{1}{2}(1600)+\frac{1}{2}(1000) = 1300$

Assume the discount rate is 0%.

Calculate the value of the option at $t = 0$.

(A) 0

(B) 50

(C) 150

(D) 200

(E) 250