

Pandemoonium

USACO Game Contest 2014

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github.com/usaco/CowCatcher

1 What is Cow Catcher

Bessie is loose in the corn field! It is up to you and your team of farmers to catch her.

One player will play as Bessie the cow. Bessie moves silently through the corn maze, completely hidden from the farmers. Except, that is, when the unstoppable urge to "Moo" hits her (with probability P). You are penned inside a 30x30 field, and will use your cunning, as well as a few tools, to avoid the farmers. You will find an invisibility cloak (reduces the chance of detection by half), a one-time use teleporter, and a radio-controlled decoy cow. There is also a patch of Farmer Joe's Prize-Winning Daisies. If Bessie tramples them, half of the farmers (in expectation) will run off to find more daisy seeds.

Bessie can also lay low and bank her mooooooooves. If on her turn Bessie stays put, she can use that additional move any time in the future.

But Farmer John has a few tricks of his own. Every T turns, one additional farmhand enters the field to assist with catching Bessie, up to a maximum of 30 farmers in total. If any of the farmhands land on the same cell as Bessie on their turn, the game is over. The final score will be determined based on how many turns Bessie lasted without capture.