Mission Ananta Jalil

Again my favorite hero Ananta Jalil? You've already heard about Jalil vai. He is a familiar figure of our film industry. He is very famous for his action romantic typo movies. Ananta Jalil is in a terrible mission. He tries to rescue his Queen Borsha. But there are too many obstacle in his paths. Dot (.) represents safe yards & Hash (#) represents risky yards which contains bomb. He can move 4 ways left, right, up & down. He can only move one safe yard to another safe yard & it costs 1 energy per move. Can he rescue Borsha? If he can then he should rescue her with minimum amount of energy loss.

Input

Input starts with an integer t≤50 which represents number of test cases. For each case input a pairs of integer R≤100 & C≤100 which represents row & column. Then input R lines containing C number of characters in each. These lines contains only (. , #, A, B) characters where A and B represents the current positions of Ananta Jalil & Borsha respectively.

Output

For each case print the case number & then print these mentioned below:

If he rescued her then print "**Yeah!:D I rescued my Queen losing only n energy.**"without quote.If he cannot then print "**mission unpossible :P**" without quote. For clarification see sample I/Os.
 (Note you must print **unpossible** because nothing is **impossible** for Ananta Jalil.)

Sample:

Input	Output
2 5 5 .#... A.#.. ##... ...B. ..#.. 5 5 .#... A.#.. #.... ...B. ..#..	Case 1: mission unpossible :P Case 2: Yeah!:D I rescued my Queen losing only 5 energy.

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