

Chap 0, Prob 5) A caterpillar crawls up a pole 75 inches high, starting from the ~~ground~~ ground. Each day it crawls up 5 inches, and each night it slides down 4 inches. When will it first reach the top of the pole?

Ans) Observation: Despite, net climb = 1 inch in 24 hours, each day, the c climbs up max 5 inch from prev posn. in the day.

On 69th night, it is at 69 inches. On 70th day, it is at 74 inches, at night it is at 70 inches. On 71st morning, it is at the top of the pole.

Chap 0, Prob 6) In a certain year there were exactly four Fridays and exactly four Mondays in January. On what day of the week did the 20th of January fall that year?

Ans) 1st, 2nd and 3rd Jan can't be Friday or Monday. 1st and 8th are same day. 4th, 5th, 6th, 7th will be Friday, Saturday, Sunday, Monday respectively.  $\therefore$  20th will be Sunday.

Chap 0, Prob 10) Pete's cat always sneezes before it rains. She sneezed today. "This means it will be raining." Pete thinks. Is he right?

Ans) No. A: It is raining B: Pete's cat sneezed before it

$A \Rightarrow B$  does not imply  $B \Rightarrow A$

Chap 0, Prob 9) Peter said: "The day before yesterday I was 10, but I will turn 13 in the next year." Is this possible?

Ans) ~~This~~ This is only possible if yesterday was ~~his~~ his birthday, the date being 31st December. He turned 11. This year he ~~turned 12~~ will turn 12, and next year he will be 13.

Chap 0, Prob 12) The son of a professor's father is talking to the father of the professor's son, and the professor does not take part in the convo. Is this possible?