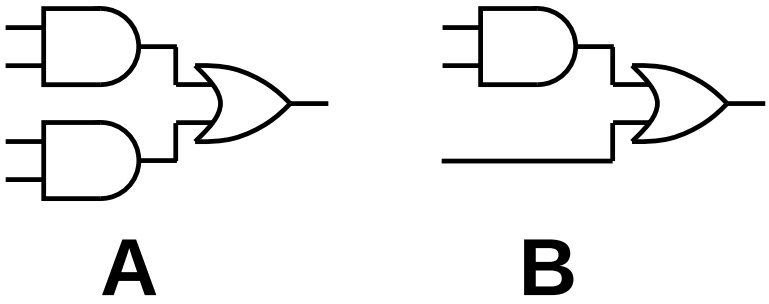
Consider the following circuits:



1. If the delay of each gate is 1, what is the delay of each of the circuits?

   A ☐ B ☐

2. Now, consider the delay of each gate to be a random variable that takes on the value 0.9 half the time and 1.1 the other half. This "random" decision is made once at fabrication time, and the gate retains the value from then on.

   (a) What is the probability that each circuit takes on each of the possible delays?

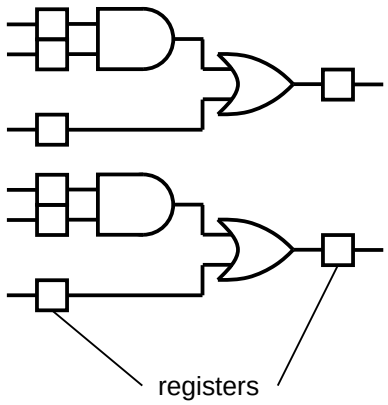
   A

Delay	1.8	2.0	2.2
P(Delay)			

   B

Delay	1.8	2.0	2.2
P(Delay)			

   (b) Consider a "chip" composed of two copies of circuit B as shown.



   What is the probability that this chip can be clocked at each of the possible delays?

Delay	1.8	2.0	2.2
P(Delay)			