**a)**

**Availability = tup / ttotal**

**A:**

**tup = 60min – 3\*30s = 58.5min**

**ttotal = 60min**

**Availability = 58.5min / 60min =97.5%**

**B:**

**tup = 60min – 30\*3s = 58.5min**

**ttotal = 60min**

**Availability = 58.5min / 60min =97.5%**

**b)**

**Given:**

***97.5% availability =^ 0.25% failrate***

**We want an availability of 99,9%, thus:**

***99.9% availability =^ 0.1% failrate***

**For each server, we get more and more availability:**

***(0. 5%)n = availabilitytotal***

**Where n is the number of servers.**

**Solving the inequation:**

***(0.5%)n <= 0.1%***

**Will resolve to the following inequation:**

***n >= log0.5%(0.1%)* (as a general form*: n >= loggiven%(desired%)*)**

**Solving this, tells us that we need 1.8 (2) servers to get this concrete availability.**