**In class exercises Ch.6:** Theorem of total probability example

Factories X and Y are the only ones manufacturing light bulbs: 99% of bulbs produce by X last more than 5,000 hours, and only 95% of those produced by Y last that much. Compute the probability that a bought bulb will last more than 5,000 hours, knowing that 60% of the bulbs on the market come from factory X.

1. Name the two mutually exclusive events:

A1 =

A2 =

1. B = a bought bulb works for more than 5,000 hours
2. Draw the Venn diagram showing A1, A2, and B.
3. P(B) =