Continuous Sampling Schemes

Every part is inspected until 5 parts in a row are good. (States 0, 1, 2, 3, and 4)
One out of every 10 parts is inspected and if it is good then continue to inspect one out of every 10 parts. (State 5: sampling)
One out of every 10 parts is inspected and if it is defective return to inspecting every part i.e. return to state 0.

Notation:
\[ i = 5 \]
\[ r = 10 \]
\[ p = \text{probability that a part is defective} \]

Average Fraction Inspected (AFI):
\[ \text{AFI} = \frac{1}{1 + (r - 1)(1 - p)^i} \]

Average Outgoing Quality (AOQ):
\[ \text{AOQ} = p(1 - \text{AFI}) = \frac{p(r - 1)(1 - p)^i}{1 + (r - 1)(1 - p)^i} \]

AOQL = 0.1814 when \( p = 0.318 \)
Every part is inspected until 10 parts in a row are good. (States 0, 1, 2, 3, …, 9)
One out of every 5 parts is inspected and if it is good then continue to inspect one out of
every 5 parts. (State 10: sampling)
One out of every 5 parts is inspected and if it is defective return to inspecting every part
i.e. return to state 0.

Notation:
\[ i = 10 \]
\[ r = 5 \]
\[ p = \text{probability that a part is defective} \]

Average Fraction Inspected (AFI):
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\text{AFI} = \frac{1}{1 + (r - 1)(1 - p)^i}
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Average Outgoing Quality (AOQ):
\[
\text{AOQ} = p(1 - \text{AFI}) = \frac{p(r - 1)(1 - p)^i}{1 + (r - 1)(1 - p)^i}
\]

AOQL = 0.06609 when \( p = 0.151 \)