(R,Q) Parameters

“order Q whenever inventory reaches R”

- Set Q as the EOQ solution
- Set R as the newsboy solution:

\[ P(\text{DDLT} < R) = \alpha \]

where \( \alpha \) is a desired service level (e.g. 95%)

DDLT = Demand During Lead Time

Example (cont’d): if weekly demand for 128Mb chips is in fact \( N(400, 80) \)
and delivery time is 2 weeks, for a 95% service level:

\[ Q = 1,013 \text{ units (as before)}, \]
\[ R = E[\text{DDLT}] + 1.65 \times \sigma[\text{DDLT}] = 800 + 1.65 \times \sqrt{2} \times 80 = 986 \]
(S, T) Parameters

“order back to S every T time units”

- Set **T** as the EOQ solution divided by the demand rate
- Set **S** as the newsboy solution:

\[ P(\text{DDLTRP} < S) = \alpha \]

where:
- \( \alpha \) is the desired service level (e.g. 95%)
- DDLTRP = Demand During Lead-Time and Review Period

Example (cont’d): For the 128Mb chips example (from slides 12 & 23):

\[ T = \frac{Q}{D} = \frac{1,013}{400} = 2.5 \text{ weeks} \]
\[ S = E[\text{DDLTRP}] + 1.65 \times \sigma[\text{DDLTRP}] \]
\[ = (400 \times 4.5) + 1.65 \times \sqrt{4.5} \times 80 = 2080 \text{ units} \]