average inventory

Holding cost

r.c

optimal number of units per order

Q\*=

orders per year

Annual ordering costs (AOC)

AOC =

annual holding cost (AHC)

AHC = H\*

total annual holding and ordering costs or total inventory cost9i

AOC+AHC

reorder point

ROP = LR – demand is constant

ROP = ltd + Is

Lead time demand

= \* = 5

ltd = L\*R

Safety Stock

Is = z\*

Is = ROP-ltd

Find Z

Comparing total cost:

Additional transportation cost per year = R\*extcost

Savings in holding cost = sl\*(sqrt(L1)-sqrt(L2)\*holding cost

if Savings in holding cost < Additional transportation cost per year

New transport should not be used.

Critica Fracture = Service level

CF =

When the order is made only once

Q\* = R+z\*

Z is negative

Stockout = 1 – sl = 0.714

Z= - 0.57