Answer on question #84691 - Economics / Microeconomics

A grocery shop sells milk packets (containing 1/2 a litre of milk) as well. It makes bulk purchase of the same from the nearby city. Every time a purchase is made, it incurs a cost of Rs.50 towards transportation. The daily demand of packets is about 250. Holding cost is Rs.0.10 for a packet a day to preserve it in a refrigerator. Determine the optimum quantity of a bulk purchase and the cycle time.

The optimal order size is calculated using the Wilson formula: : $q_0 = \sqrt{\frac{2C_1Q}{C_2}}$

where q0 is the optimal order size, pcs;

C1 - the cost of a single order, r. (overhead);

Q - the need for inventory items for a certain period of time (year), units;

C2 - the cost of maintaining a unit of inventory, r / pcs.

$$q0 = \sqrt{\frac{2 * 50 * 250}{0{,}1 * 250}} = 31{,}62(r.)$$