Question 1

(10 points) What are the assumptions made in the basic EOQ model? Can you think of a product/industry where these assumptions might be satisfied? Explain why.

Question 2

An automotive repair shop stocks many sizes of tires. One particular size and model is purchased for $30 and sold for $45. The manager estimates the cost to order at $75, including the delivery charge and the paperwork. Using the cost of rent, interest, and utilities, the manager estimates the cost of carrying inventory at approximately 50% per year based on average inventory value. The shop sells approximately 3,000 of these tires per year. Orders are received 2 weeks after placement.

a) (10 points) Determine the optimal number of tires the shop should purchase each time an order is placed, and the time between placement of orders.

b) (5 points) What is the reorder point?

c) (5 points) If the current policy is to place orders once every two months, what are the additional holding and setup costs incurred by this policy?

d) (5 points) What would the reorder point be if the orders were received 8 weeks after they were placed?