Plot Co sells both Product P and Product Q, with sales of both products occurring evenly throughout the year.

Product P

The annual demand for Product P is 300,000 units and an order for new inventory is placed each month. Each order costs $267 to place. The cost of holding Product P in inventory is 10 cents per unit per year. Buffer inventory equal to 40% of one month's sales is maintained.

Other information

Plot Co finances working capital with short-term finance costing 5% per year. Assume that there are 365 days in each
year.

Required:

(a) Calculate the following values for Product P:

(i) The total cost of the current ordering policy; (3 marks)
(ii) The total cost of an ordering policy using the economic order quantity; (3 marks)
(iii) The net cost or saving of introducing an ordering policy using the economic order quantity. (1 mark)