Assignment 4

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

1) Find the EOQ given \( D = 14000, C_0 = 400, C = 40 \) and \( i = 20\% \).  
Find TC, N and T?

- \( EOQ = 1183.32, N = 11.83 \) orders, \( T = 0.084 \) year per order, \( TC = 9465.72 \)
- \( EOQ = 1183.32, N = 11.83 \) orders, \( T = 0.084 \) year, \( TC = 9465.72 \)
- \( EOQ = 1183.32, N = 11.83 \) orders, \( T = 0.084 \) order per year, \( TC = 9465.72 \)
- \( EOQ = 1183.32, N = 11.83 \) years, \( T = 0.084 \) year per order, \( TC = 9465.72 \)

No, the answer is incorrect.
Score: 0
Accepted Answers:

- \( EOQ = 1183.32, N = 11.83 \) orders, \( T = 0.084 \) year per order, \( TC = 9465.72 \)

2) Given \( D = 14000, C = 40 \) and \( i = 20\% \). Find the value of \( C_0 \) if \( Q = 1500 \).

- 642.857
- 560.44
- 280.00
- 600.00

No, the answer is incorrect.
Score: 0
Accepted Answers:

- 642.857
no, the answer is incorrect.

score: 0

accepted answers: 

**eq = 1400; tc = 8000; yes tc is less when \( c_s \) is considered.**

4) find the eq given \( d = 16000 \), \( c_0 = 600 \), \( c = 80 \) and \( i = 20\% \) and \( c_s = rs 30/unit/year. \) find tc, n and t?

- eq = 1265.44; \( n = 11.79; t = 0.0865years \); \( tc = 14154.43 \)
- eq = 1354; \( n = 15; t = 0.0865years \); \( tc = 14154.43 \)
- eq = 1356.46; \( n = 11.79; t = 0.0865years \); \( tc = 14154.43 \)

no, the answer is incorrect.

score: 0

accepted answers: 

**eq = 1356.46; n = 11.79; t = 0.0865years ; tc = 14154.43**

5) given \( d = 14000 \), \( c_0 = 400 \), \( c = 40 \) and \( i = 20\% \). the supplier is willing to give an all quantity discount of 2% if \( q \geq 2000 \) and 4% when \( q \geq 5000? \) which is profitable?

[assume \( c_0 = 400; eq = 1183.22; tc (including item cost) = 9465.73 + 14000x40 = 569465.73. \]

\[ at q = 2000 \ c = 39.2. \ tc = 2800 + 7840 + 14000x39.2 = 559440 \]

\[ q = 5000 \ c = 38.4. \ tc = 1120 + 19200 + 537600 = 557920. \]

- it is profitable to accept 2% discount at \( q = 2000. \)
- it is profitable to accept 4% discount at \( q = 5000. \)
- it is profitable to order \( q \) equal to \( eq \)

no, the answer is incorrect.

score: 0

accepted answers:

**it is profitable to accept 4% discount at \( q = 5000. \)**

6) given \( d = 14000 \), \( c_0 = 400 \), \( c = 40 \) and \( i = 20\% \). the supplier is willing to give an all quantity discount of 2% if \( q \geq 2000 \) and 4% when \( q \geq 5000? \) there is also a marginal quantity discount of 5% and 10% at quantities 2000 and 5000 respectively. find the best ordering policy under the conditions?

- all quantity of discount of 2% when \( q \geq 2000 \)
- marginal quantity discount of 5% at \( q = 2000 \)
- all quantity of discount of 4% when \( q \geq 5000 \)
- marginal quantity discount of 10% at \( q = 5000 \)
- to order \( q \) equal to \( eq \)

no, the answer is incorrect.

score: 0

accepted answers: 

**all quantity of discount of 4% when \( q \geq 5000 \)**
7) Given \( D = 14000 \), \( C_0 = 400 \) \( C = 40 \) and \( i = 20\% \). The supplier is willing to give an all quantity discount of 1\% if \( Q \geq 1500 \) and 3\% when \( Q \geq 5000 \)? There is also a marginal quantity discount of 2\% and 10\% at quantities 1500 and 5000 respectively. Find the best ordering policy under the conditions?

- All quantity of discount of 1\% when \( Q \geq 1500 \)
- Marginal quantity discount of 2\% at \( Q = 1500 \)
- Marginal quantity discount of 10\% at \( Q = 5000 \)
- To order \( Q \) equal to EOQ
- All quantity of discount of 3\% when \( Q \geq 5000 \)

No, the answer is incorrect.
Score: 0
Accepted Answers:
All quantity of discount of 3\% when \( Q \geq 5000 \)

Based on data, Answer 8-9:

Consider two items with the following data \( D_1 = 12000 \), \( D_2 = 16000 \), \( C_0 = 1000 \), \( C_1 = 80 \) and \( C_2 = 50 \), \( i = 20\% \). There is a limit of 15 on the total number of orders. Find the order quantities?

Hint: use the Lagrangean multiplier method

8) \( Q_1 = \)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 1525,1535

9) \( Q_2 = \)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 2230,2240

Based on data, Answer 10-11:

Consider two items with the following data \( D_1 = 12000 \), \( D_2 = 16000 \), \( C_0 = 1000 \), \( C_1 = 80 \) and \( C_2 = 50 \), \( i = 20\% \). There is a limit of Rs 80000 on the money value of average inventory. Find the order quantities?

10) \( Q_1 = \)

No, the answer is incorrect.
Score: 0
Accepted Answers:
Based on data, Answer 12-13:

Consider two items with the following data \( D_1 = 12000, D_2 = 16000, \) \( C_0 = 1000, C_1 = 80 \) and \( C_2 = 50, i = 20\% \). There is a limit of Rs 80000 on the money value of average inventory. There is also a space restriction of 80000 on the space for average inventory. The two items require space of 100 and 60. Find the order quantities?

Hint: take \( \lambda = 0.2126 \)

\[ Q_1 = \]

\[ Q_2 = \]

Based on data, Answer 14-16:

Consider two items with the following data \( D_1 = 18000, D_2 = 20000, \) \( C_0 = 1000, C_1 = 80 \) and \( C_2 = 50, i = 20\% \). The company has a policy of ordering the items together even though there is no gain. What is their % loss when compared to the EOQ solutions?

\[ \text{Number of orders:} = \]

Operations and supply chain management - - Un... https://onlinecourses-archive.nptel.ac.in/noc19...
Based on data, Answer 17-19:

Consider two items with the following data $D_1 = 18000$, $D_2 = 20000$, $C_0 = 1000$, $C_1 = 80$ and $C_2 = 50$, $i = 20\%$. The order cost has two components - an administrative cost of 400 and truck cost of 600. The company can save one truck cost if the items are ordered together. Find the %gain compared to EOQ?

17$C_0 = \quad$

18Joint total cost =

19% gain =

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 1400

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 17,23

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 36430,36480