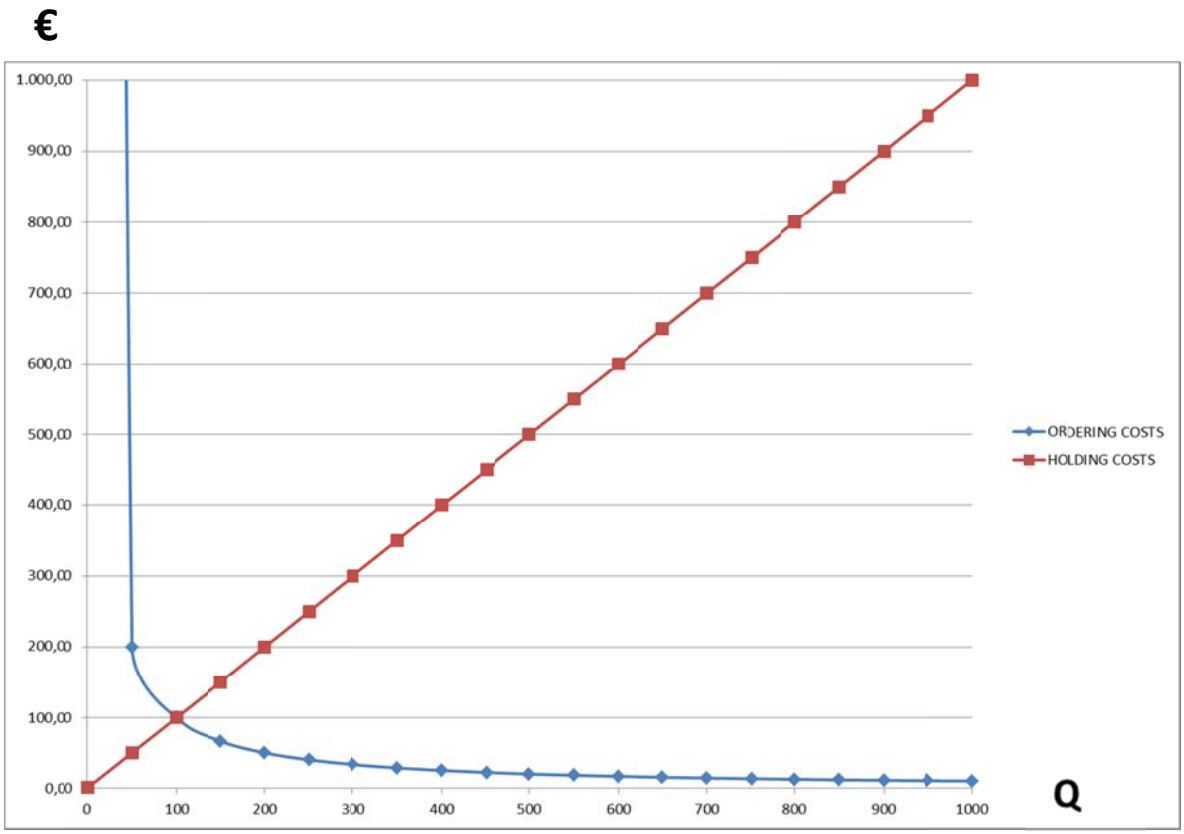
SOLUTION 2.2

1) Total annual costs = (1,000 x 10) + (10x 1,000 / Q) + (2 x Q /2)
In order to minimize total costs:
$-10{,}000 / Q^2 + 1 = 0$
Q = 100 kg per order (10 orders)
Total annual costs = €10,200

Q	ORDERING COSTS	HOLDING COSTS	TOTAL
1	10,000.00	1	**20,001.00**
50	200.00	50	**10,250.00**
100	100.00	100	**10,200.00**
150	66.67	150	**10,216.67**
200	50.00	200	**10,250.00**
250	40.00	250	**10,290.00**
300	33.33	300	**10,333.33**
350	28.57	350	**10,378.57**
400	25.00	400	**10,425.00**
450	22.22	450	**10,472.22**
500	20.00	500	**10,520.00**
550	18.18	550	**10,568.18**
600	16.67	600	**10,616.67**
650	15.38	650	**10,665.38**
700	14.29	700	**10,714.29**
750	13.33	750	**10,763.33**
800	12.50	800	**10,812.50**
850	11.76	850	**10,861.76**
900	11.11	900	**10,911.11**
950	10.53	950	**10,960.53**
1,000	10.00	1,000	**11,010.00**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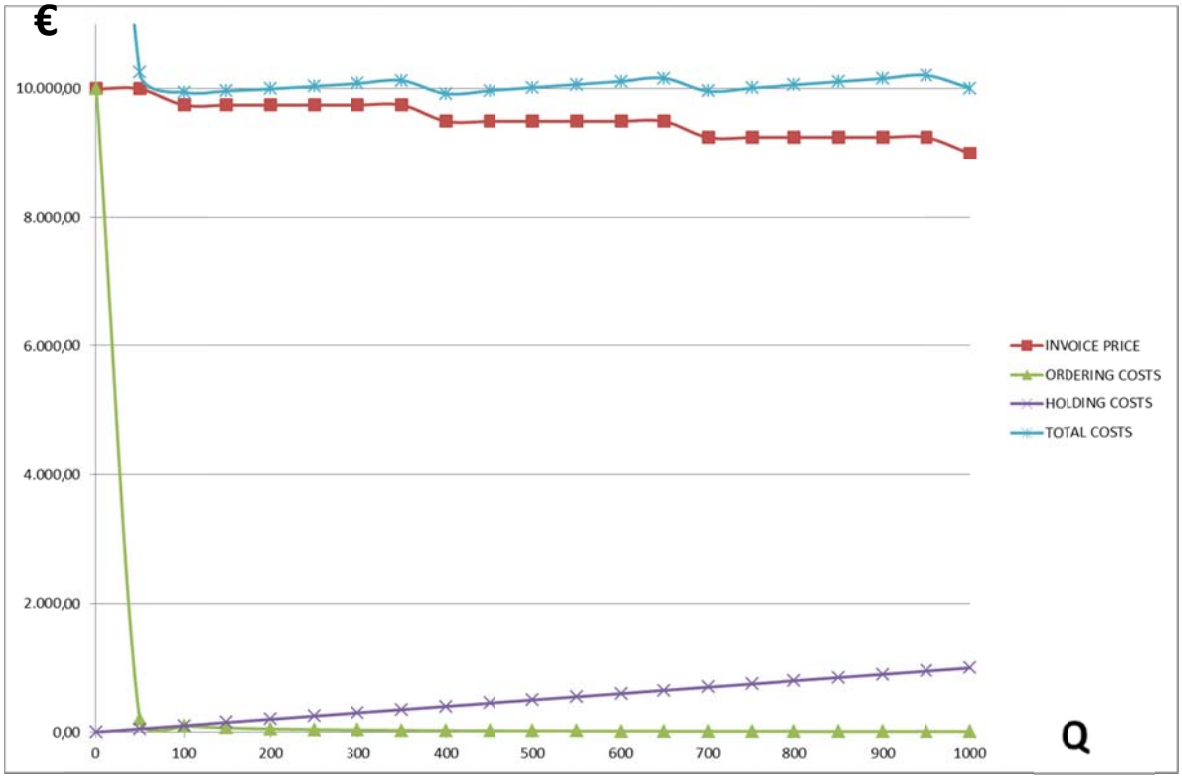
Q
ORDERING COSTS
HOLDING COSTS

2) As this supplier offers bulk discounts, the EOQ model cannot be used. Let's use a spreadsheet to calculate total costs:

Q	PURCHASING PRICE	INVOICE PRICE	ORDERING COSTS	HOLDING COSTS	TOTAL COSTS
1	10	10,000.00	10,000.00	1	20,001.00
50	10	10,000.00	200.00	50	10,250.00
100	9.75	9,750.00	100.00	100	9,950.00
150	9.75	9,750.00	66.67	150	9,966.67
200	9.75	9,750.00	50.00	200	10,000.00
250	9.75	9,750.00	40.00	250	10,040.00
300	9.75	9,750.00	33.33	300	10,083.33
350	9.75	9,750.00	28.57	350	10,128.57
400	9.5	9,500.00	25.00	400	9,925.00
450	9.5	9,500.00	22.22	450	9,972.22
500	9.5	9,500.00	20.00	500	10,020.00
550	9.5	9,500.00	18.18	550	10,068.18
600	9.5	9,500.00	16.67	600	10,116.67
650	9.5	9,500.00	15.38	650	10,165.38
700	9.25	9,250.00	14.29	700	9,964.29
750	9.25	9,250.00	13.33	750	10,013.33
800	9.25	9,250.00	12.50	800	10,062.50
850	9.25	9,250.00	11.76	850	10,111.76
900	9.25	9,250.00	11.11	900	10,161.11
950	9.25	9,250.00	10.53	950	10,210.53
1,000	9	9,000.00	10.00	1,000	10,010.00



Total costs are minimized if Q = 400 units per order

Total costs: €9,925