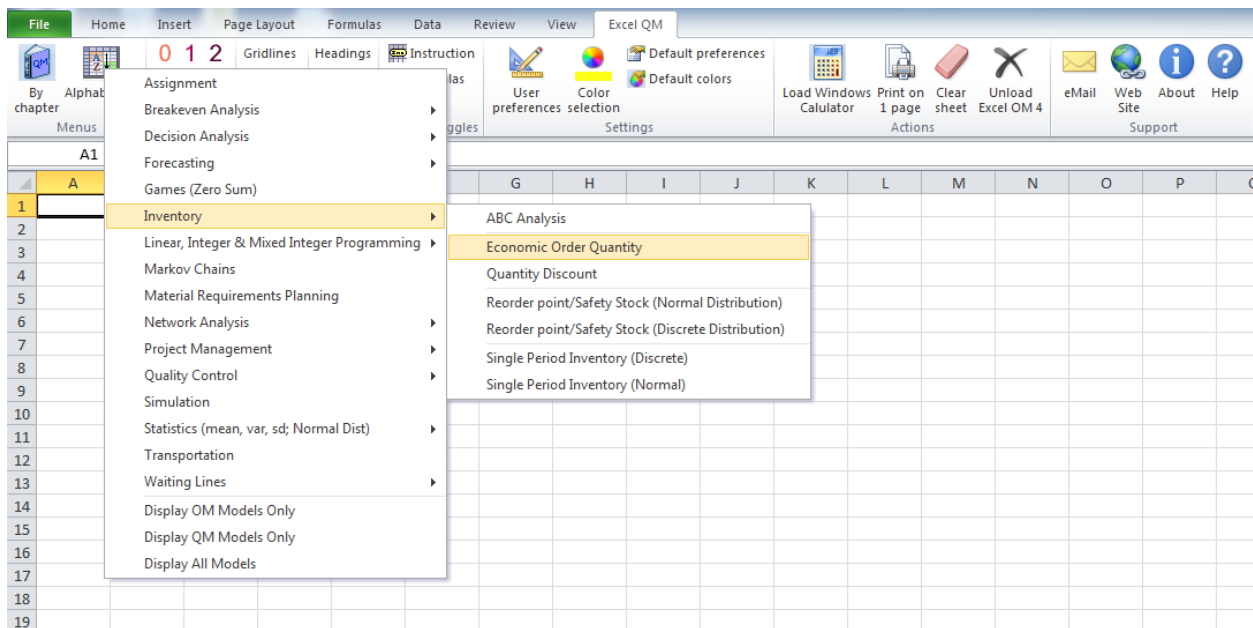


Economic Order Quantity

In this tutorial, we will examine how to calculate an economic order quantity (EOQ) and the reorder point (ROP).

Neha Shah is the purchasing agent for a firm that sells industrial valves and fluid control devices. One of the most popular valves is the KA1, which has an annual demand of 6,000 units. The cost of each valve is \$120 and the inventory carrying cost is estimated to be 8% of the cost of each valve. It also costs her an additional \$45 each time she orders and it takes about two weeks for an order to arrive from the supplier. The demand for KA1 valves is approximately 120 per week.

To calculate the EOQ, open Excel QM, click on the **Excel QM** tab → **Alphabetical** → **Inventory** → **Economic Order Quantity**.



Be sure you tick the box for **Reorder Point** and uncheck the box for **Graph**.

The screenshot shows a dialog box titled "Spreadsheet Initialization". It has two input fields: "Title:" and "Sheet name:". Below these are "Options" with two checkboxes: "Reorder Point" (checked) and "Graph" (unchecked). A red arrow points to the "Reorder Point" checkbox. At the bottom left, there is a "Holding cost" section with two radio buttons: "Fixed amount" (selected) and "Percent of unit cost". At the bottom right, there are buttons for "Use Default Settings", "Help", "Cancel", and "OK".

Click **OK**. A spreadsheet will appear.

	A	B	C	D	E
1	Inventory	Economic Order Quantity Model			
2	Enter the data in the shaded area				
3					
4					
5	Data				
6	Demand rate, D				
7	Ordering/Setup cost, S				
8	Holding cost, H		(fixed amount)		
9	Unit Price, P				
10	Daily demand rate, d				
11	Lead time in days, L				
12					
13	Results				
14	Optimal Order Quantity, Q*	#DIV/0!			
15	Maximum Inventory	#DIV/0!			
16	Average Inventory	#DIV/0!			
17	Number of Orders	#DIV/0!			
18					
19	Holding cost	#DIV/0!			
20	Order cost	#DIV/0!			
21					
22	Unit costs	\$0.00			
23	Total cost, T _c	#DIV/0!			
24	Reorder Point	0			
25					
26					

Now enter the data into the spreadsheet. Our demand rate is 6000, the ordering cost is \$45, the holding cost is 8% of 120, or \$9.60, and our unit price is \$120. For the daily demand rate, we can use our weekly demand of 120, or 24 per day and our lead time in weeks is 2, or 10 days. Once you enter the data, the results will be automatically calculated.

	A	B	C	D	E
1	Inventory	Economic Order Quantity Model			
2	Enter the data in the shaded area				
3					
4					
5	Data				
6	Demand rate, D	6000			
7	Ordering/Setup cost, S	45			
8	Holding cost, H	9.6	(fixed amount)		
9	Unit Price, P	120			
10	Daily demand rate, d	24			
11	Lead time in days, L	10			
12					
13	Results				
14	Optimal Order Quantity, Q*	237.1708245			
15	Maximum Inventory	237.1708245			
16	Average Inventory	118.5854123			
17	Number of Orders	25.29822128			
18					
19	Holding cost	\$1,138.42			
20	Order cost	\$1,138.42			
21					
22	Unit costs	\$720,000.00			
23	Total cost, T _c	\$722,276.84			
24	Reorder Point	240			
25					

We can see that our EOQ is 237.17, or rounded up to 238. Our reorder point is 240 units, so when we get our inventory to 240 units, it is time to reorder. [Click here](#) to download the completed sample spreadsheet so you can compare it to yours.

This concludes the tutorial on calculating EOQ using Excel QM.