

## HOMWORK: SCATTER PLOTS USING MS EXCEL

### PROBLEM 1:

An entrepreneur purchases dress shirts from China at a price of \$2. She wants to sell them on the Internet (E-Commerce) and decides to try different prices to see whether price affects quantity demanded. Using the data below, draw a scatter plot (also called scatter diagram). Since demand curves traditionally show price as the Y-axis, and Q-demanded as the X-axis, the first column is Q-demanded.

Do you think there is a relationship between Price and Q-demanded? What kind of relationship? Use MS Excel to draw a scatter plot.

Quantity Sold	Price of Shirts
400	\$ 5.00
390	\$ 6.00
410	\$ 7.00
375	\$ 8.00
350	\$ 9.00
380	\$ 10.00
340	\$ 11.00
300	\$ 12.00
310	\$ 13.00
290	\$ 14.00
280	\$ 15.00
295	\$ 16.00
220	\$ 17.00
250	\$ 18.00
200	\$ 19.00
240	\$ 20.00
160	\$ 25.00
150	\$ 30.00
140	\$ 36.00
110	\$ 40.00



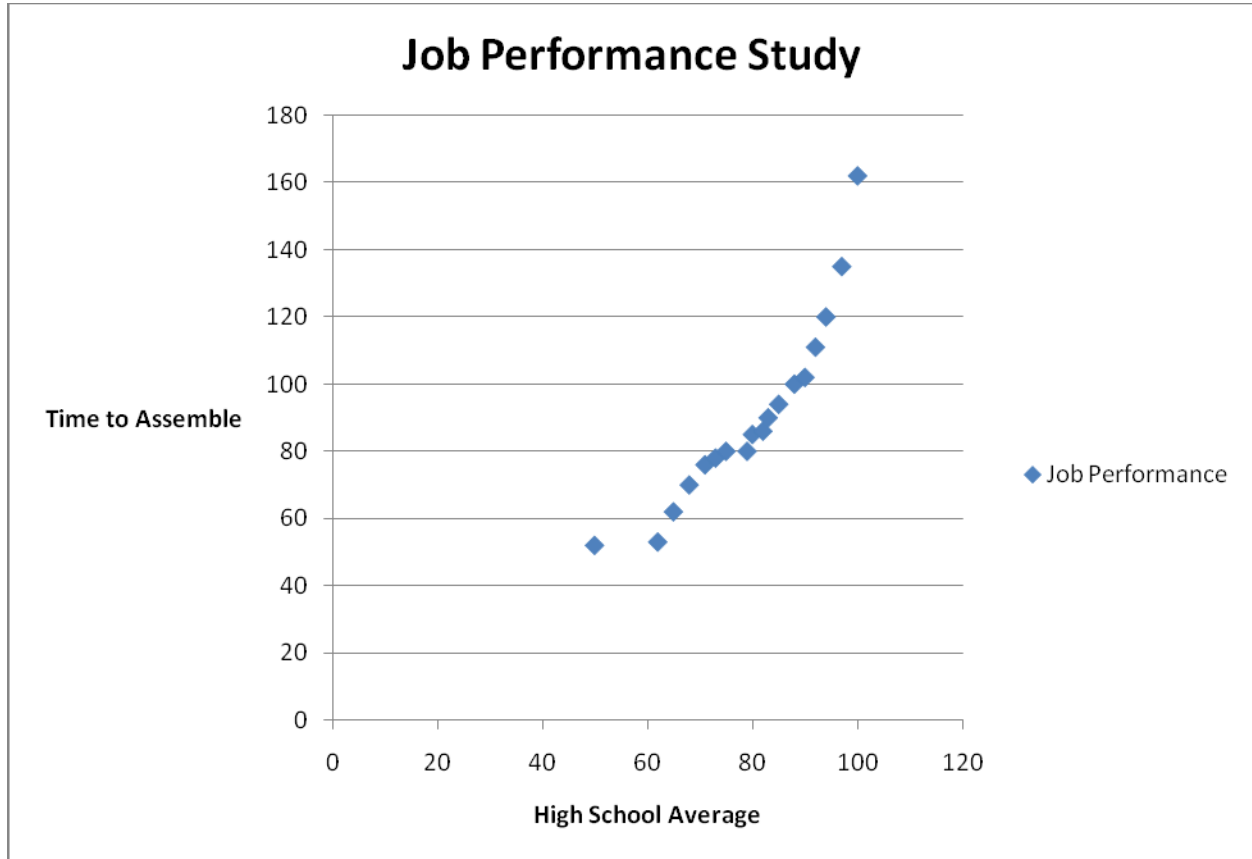
The scatter plot indicates a pattern that is linear with a negative slope. So, the relationship is linear and negative. There appears to be an *inverse* relationship between price and quantity demanded, which means that fewer shirts are sold at higher prices (duh!). In fact, the pattern follows the law of demand as taught in microeconomics: as price goes up, quantity demanded goes down.

**PROBLEM 2:**

A company that manufactures small lathes is interested in establishing standards for employees. A random sample of 18 employees is selected in order to develop the standards. The data collected is below.

A manager at the firm feels that assembly time is related to intelligence. She feels that employees who did well in high school (as measured by high school averages) should be able to do the job faster. Does the data support her hunch? Use MS Excel to draw a Scatter Plot.

<b>high school average</b>	<b>Time to assemble lathe (minutes)</b>
50	52
62	53
65	62
68	70
71	76
73	78
75	80
79	80
80	85
82	86
83	90
85	94
88	100
90	102
92	111
94	120
97	135
100	162



No, the data does not support the manager's hunch. According to the data, the higher an employee's HS average, the longer it takes him/her to assemble a lathe. This scatterplot shows that the data has a (fairly) linear, positive relationship.