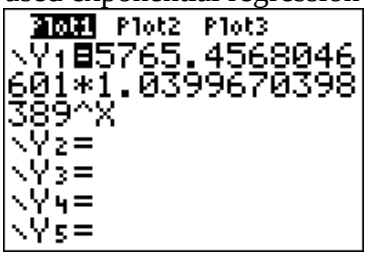
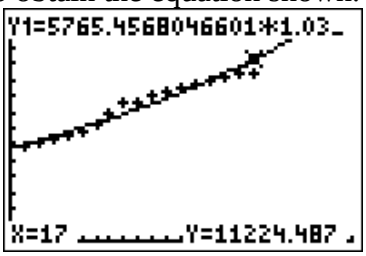
Chapter 6 Task Level 3 Sample Solution

a) I plotted the points, not including month 18 because the data is incomplete. Sumita used exponential regression to obtain the equation shown.

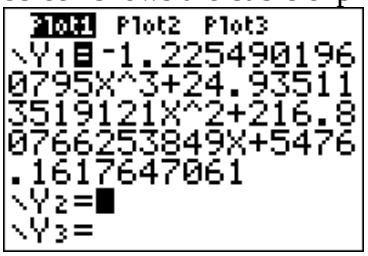


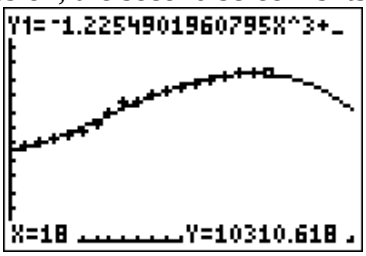


Using the Trace operation, the sales for the next five months with the exponential model are as follows. This model assumes that growth continues in the same exponential pattern. It may be a reasonable model, although from the graph it appears that the growth is exponential for the first 8 months, then the growth appears to slow down and looks more linear.

Month	Sales
18	11 673
19	12 140
20	12 625
21	13 129
22	13 654

b) For Jason's cubic regression, I also plotted the data for the first 17 months. The first screen shows the cubic expression, the second screen is its graph.





Using the Trace operation, the sales for the next five months with the cubic model are as follows. This curve seems to fit the data so far very well, however the down turn may or may not reflect reality.

Month	Sales
18	10 311
19	10 091
20	9 982
21	9 676
22	9266

c) People running a business hope to have increasing sales, so Ciel would probably use Sumita's sales forecast for her business plan. However, she should try to analyse why sales have softened after the eighth month. Is the market saturated? Have other competing stores opened? What can Ciel do to improve her sales? Perhaps increased advertising or a new special price to attract new customers.