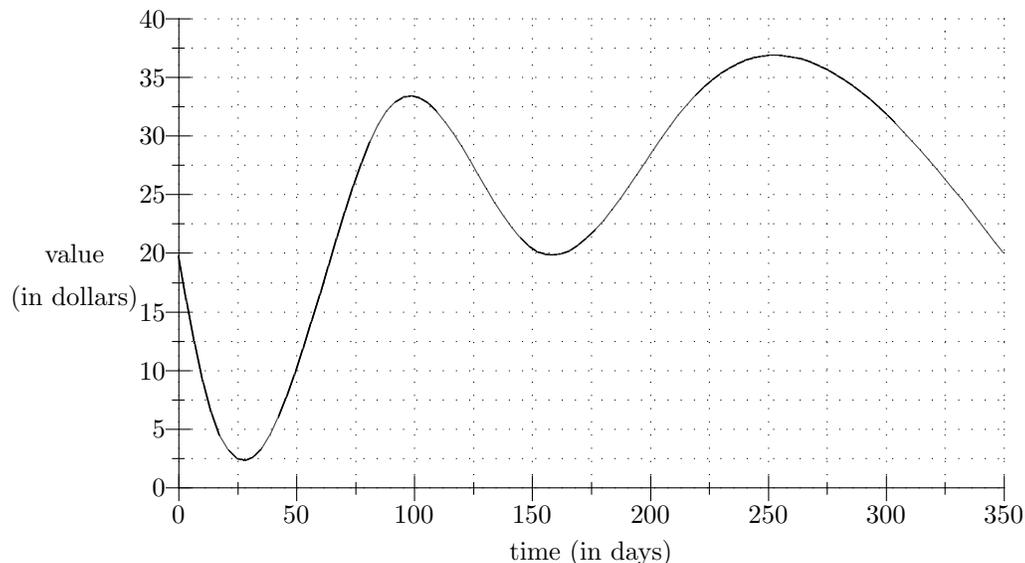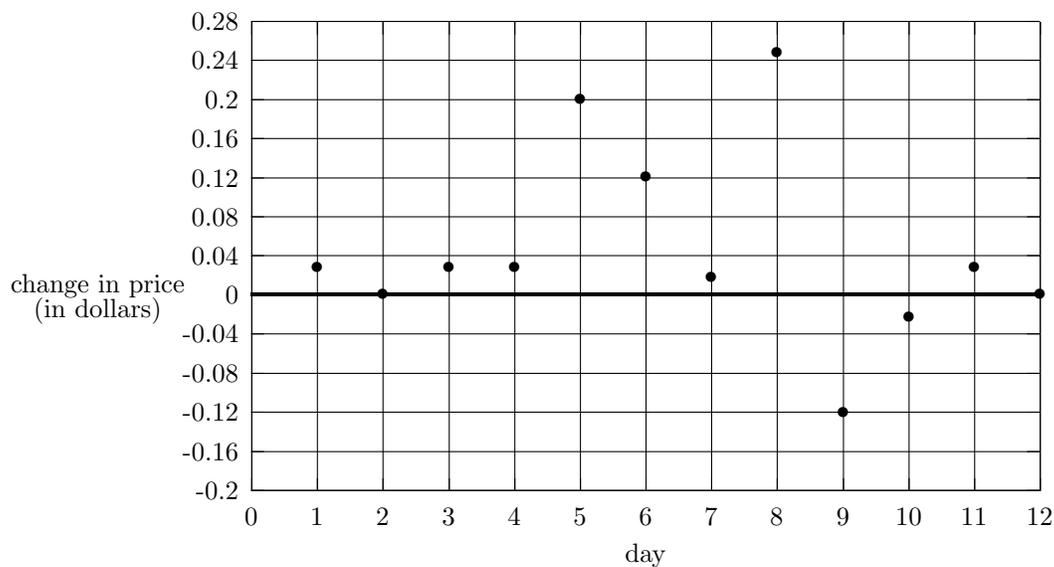## Math 111
Group Activity: Change and Average Change

1. Below is a graph of the value vs. time for one share of stock for a company named Banana Patch.

For the following, approximate as well as you can and include units with your answers.

(a) What is the value of one share of stock on day 300?

(b) How much does the value of one share of stock change during the first 300 days?

(c) How much, in dollars per day, does the value of one share of stock change *on average* in the first 300 days?

(d) Can you describe your answer to part (c) in graphical terms as the slope of a line on this graph? Be specific.

(e) How much, in dollars per day, does the value of one share of stock change *on average* from the 50th day to the 100th day?

(f) Can you describe your answer to part (e) in graphical terms as the slope of a line? Be specific.

(g) You have $1000 that you would like to invest in Banana Patch. On day 0, you buy as many shares as you can afford. What is your investment worth on day 125?

(h) How much, in dollars per day, does the value of your investment from part (g) change *on average* from day 0 to day 125?

2. The *opening price* of a stock is the value of the stock when the stock market opens. The opening price of one share of stock for the Mambo Dog Company is monitored over several days. The graph below gives the **change** in the opening price since the previous day. For example, the change in price at $t = 1$ is $0.03, which means that the opening price of the stock on day 1 is $0.03 higher than the opening price on day 0.

Again, approximate as accurately as you can and include units.

(a) Suppose the opening price of Mambo Dog is $5.35 on day 0. What is the opening price on day 4?

(b) How much higher is the opening price on day 5 than on day 3?

(c) Name all days on which the opening price of Mambo Dog was the same as the day before.

(d)   i. Is the opening price higher on day 5 or day 6? Explain.

     ii. Is the opening price higher on day 9 or day 10? Explain.