Problem 1 – Difference vs. Distance

1. On page 1.2, you are given the high temperature for the first ten days of February. Find the mean of temp in the math textbox provided. Verify the result by hand.

2. Move to page 1.3

a. Record the differences between the temperature and the mean.

Difference _____

b. What do you notice about these numbers?

c. What is the highest difference? smallest difference?

d. When are the differences negative? positive?

3. Move to page 1.4

a. Record the distance between the temperature and the mean. Distance _____

b. What do you notice about these numbers?

c. What is different between the difference and the distance between the temperatures and the mean?

4. Move to page 1.5 and read the instructions and then move to page 1.6. A scatter plot to compare the differences (x) and the distances (y) is given.

a. What happens to y when x is positive? When x is negative?

b. When will y be negative? When is x negative?

c. Graph the function f1(x) = x. What is the relationship between $y = x$ and the scatter plot?

d. Graph the function f2(x) = $-x$. What is the relationship between $y = -x$ and the scatter plot?

e. How are the values for f1(x) and f2(x) related?

f. Where is f1(x) = 0? Where is f2(x) = 0?

5. Move to page 1.8 and graph the function f3(x) = abs(x). Note: abs(x) is written as $|x|$ (absolute value of x).

What is the relationship between y = abs(x) and the scatter plot?

Problem 2 – Another absolute value equation

6. On page 2.2, the function f1(x) = x + 7 is graphed.

When are the values of f1(x) positive? negative? zero?

7. On page 2.4, you are given the graphs of f1(x) = x + 7 and f2(x) = abs(x) + 7.

a. What seems to be the relationship between the two graphs?

b. Examine the values in the function table. Is the relationship between f2(x) and f1(x) what you were expecting? Why or why not?

c. Where are the y-values equal to 0?

8. On page 2.6, you are given the graphs of f1(x) = x + 7 and f3(x) = abs(x + 7).

a. What seems to be the relationship between the two graphs?

b. Examine the values in the function table. Is the relationship between f3(x) and f1(x) what you were expecting? Why or why not?

c. Where are the y-values equal to 0?