Math 1800 Project 1: Heatmaps

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Figure 1 shows the contours of the temperature along one wall of a heated room through one winter day, with time indicated as on a **24**-hour clock. The room has a heater located at the leftmost corner of the wall and one window in the wall. The heater is controlled by a thermostat about **2** feet from the window.

(a) Where is the window?

(b) When is the window open?

(c) When is the heat on?

(d) Draw graphs of the temperature along the wall of the room at 6 am, at 11 am, at 3 pm (15 hours) and at 5 pm (17 hours).

(e) Draw a graph of the temperature as a function of time at the heater, at the window and midway between them.

(f) The temperature at the window at 5 pm (17 hours) is less than at 11 am. Why do you think this might be?

(g) To what temperature do you think the thermostat is set? How do you know?

(h) Where is the thermostat?

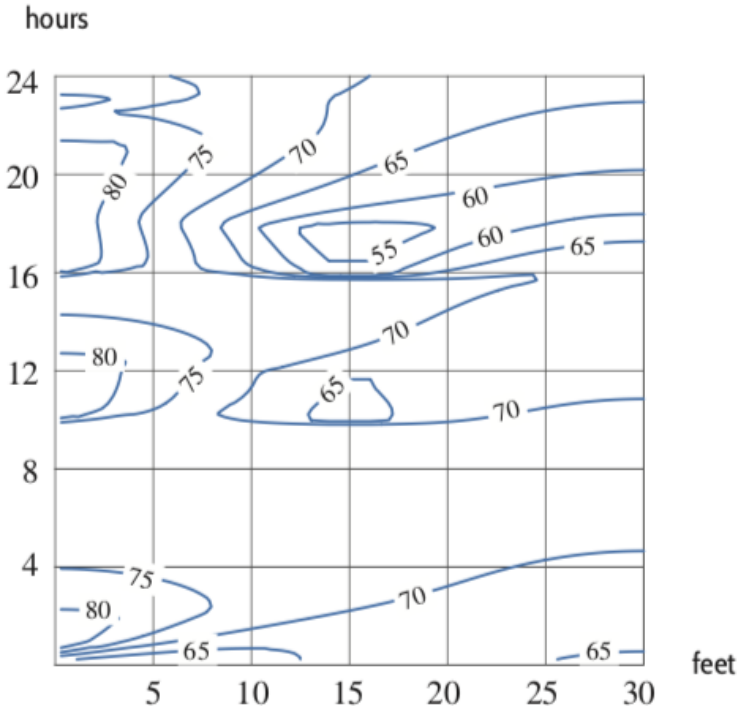
hours
24
20
16
12
8
4
80
75
70
65
60
55
60
65
70
80
75
65
70
75
80
65
70
65
5
10
15
20
25
30
feet

Figure 1