2-1-1 Activity: Patterns

1. Give linear and non-linear sequences of decimals (in tables: Not necessarily with a constant change in x) and ask if it is a linear sequence or not. If it is, write an (approximate) equation for the sequence.
2. APC: Exercises for 1.3.4 #8 (p. 34): Good multiple choice about average rate. Others like it in the exercises. The table below gives the average temperature, T, at a depth d, in a borehole in Belleterre, Quebec. d, depth (m) T, temp (C ◦ ) 25 5.50 50 5.20 75 5.10 100 5.10 125 5.30 150 5.50 175 5.75 200 6.00 225 6.25 250 6.50 275 6.75 300 7.00

Evaluate ∆T/∆d on the following intervals

a) 125 ≤ d ≤ 275 ∆T/∆d =

b) 25 ≤ d ≤ 125 ∆T/∆d =

c) 75 ≤ d ≤ 200 ∆T/∆d =

d) Which of the statements below correctly explains the significance of your answer to part (c)? Select all that apply (more than one may apply).

□ On average, the temperature is changing at a rate of 0.0072 degrees Celsius per minute over the interval 75 ≤ d ≤ 200 .

□ 0.0072 is the slope of the graph of at d 75.

□ The temperature changes by a total of 0.0072 degrees Celsius when moving from a depth 75 meters to 200 meters.

□ Over the interval from 75 meters to 200 meters, the temperature changes on average at a rate of 0.0072 degrees Celsius per meter.

□ The temperature is changing at a rate of 0.0072 degrees Celsius per minute when the depth is 75 meters.

□ None of the above