EXERCISES

1. Enter the data in Table 4 of the pressure of a gas at various temperatures into your calculator and answer the following questions.

Table 4. Gas Pressures	
L1, Temperature (K)	L2, Pressure (torr)
200	600
250	750
300	900
350	1050
400	1200

   a. What is the equation for this function?

   b. What is the pressure when the temperature is 0 K?

EXERCISES (CONTINUED)

2. Enter the data in Table 5 for the pressure versus distance below the surface of a body of water. Remember that the title of a graph is always the dependent variable (y-axis) versus the independent variable (x-axis). Analysis is easiest if the x-value is placed in L1 and the y-value is placed in L2.

Table 5. Pressure Below Surface

Distance Below Surface (ft)	Pressure (lb/in^2)
5	16.93
20	23.61
33	29.40
50	36.97

a. What is the pressure at the surface of the water?

b. What does this represent?

EXERCISES (CONTINUED)

3. On a distant planet far, far away, the atmosphere is different from that of Earth. The speed of sound is not the same. Use the data collected in Table 6 to answer the following questions.

Table 6. Speed of Sound	
Temperature (°C)	**Speed of Sound (m/s)**
0	276
10	289
20	302
30	315
50	341

a. What is the slope of this line?

b. At what temperature is the speed of sound 295 m/s?

EXERCISES (CONTINUED)

4. A small toy car is given a push to start it rolling down an inclined plane. The distance versus time is collected in Table 7.

Table 7. Motion of Toy Car	
Time (s)	**Distance (m)**
1	15.0
2	50.0
3	105.0
4	180.0
5	275.0
10	1050.0

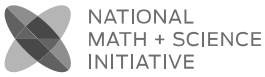
   a. Does this look like a linear function?

   b. Can you describe the motion of the car in words?

CHALLENGE QUESTIONS

1. What is the mathematical function that describes this data?

2. What does the "*b*" in this particular equation represent?



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