

Problem 1.2

Here are the walking rates that Gilberto, Alana, and Leanne found in their experiment.

- A** 1. Make a table showing the distance walked by each student for the first ten seconds. How does the walking rate appear as a pattern in the table?

Name	Walking Rate
Alana	1 meter per second
Gilberto	2 meters per second
Leanne	2.5 meters per second

2. Graph the times and distances for the three students on the same coordinate axes. Use a different color for each student's data. How does the walking rate affect the graph?
3. Write an equation that gives the relationship between the time t and the distance d walked for each student. How is the walking rate represented in the equations?
4. How can you predict that the graph will be a straight line from the patterns in the table? In the equation? Explain.
5. Are any of these proportional relationships? If so, what is the constant of proportionality?

- B** For each student:

1. If time t increases by 1 second, by how much does the distance d change? How is this change represented in a table? In a graph?
2. If t increases by 5 seconds, by how much does d change? How is this change represented in a table? In a graph?
3. What is the walking rate per minute? The walking rate per hour?

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continued

- C** Four other friends who are part of the walkathon made the following representations of their data. Could any of these relationships be linear relationships? Explain.

George's Walking Rate

Time (seconds)	Distance (meters)
0	0
1	2
2	9
3	11
4	20
5	25

Elizabeth's Walking Rate

Time (seconds)	Distance (meters)
0	0
2	3
4	6
6	9
8	12
10	15

Billie's Walking Rate

$$D = 2.25t$$

D represents distance
 t represents time

Bob's Walking Rate

$$t = \frac{100}{r}$$

t represents time
 r represents walking rate