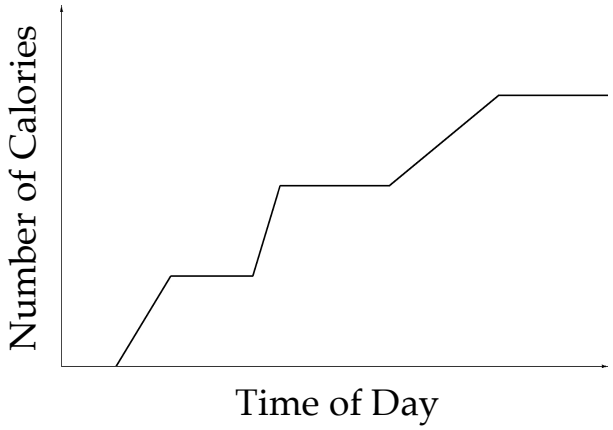
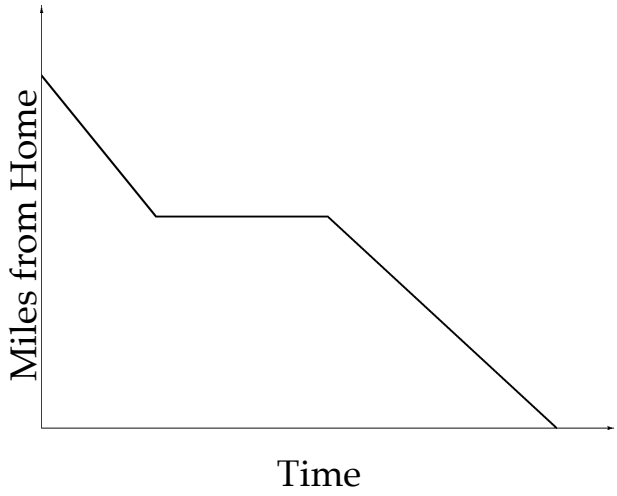
Representing Functions

1. Each graph below tells a story. Write a story for each graph.
   a. Total number of calories ingested as a function of time of day.



   b. Miles from home as a function of time.



2. Three students are saving for tuition for second semester. They each need $2,115. Cory is starting with $1,000 and plans to save $80 a week. Fatima is starting with nothing and putting aside $150 a week. Lucky Andy has $1500 and is putting in $41 a week.

   a. Make a table for each student of the amount saved each week up to the fifteenth week. Then draw a graph for each student to represent his or her savings. <u>Put all the graphs on the same set of axes.</u>

   b. For each student, write an equation that shows how much money he or she saved for *x* weeks.

b. What connections do you notice between the *y-intercept* of each graph and its equation? What connection do you see between the slope of each graph and the numbers in its equation? Explain why you think each connection exists.

c. What connection do you see between the slopes of the graphs and their tables? What would be the table entry for each y-intercept? What does the *y-intercept* represent in relation to each student's savings?

3. The graph below shows the approximate number of meters a runner runs in seconds. What is her average rate of speed for the first 400 meters? Explain how you got your answer. At what part of her run is she running the fastest?