

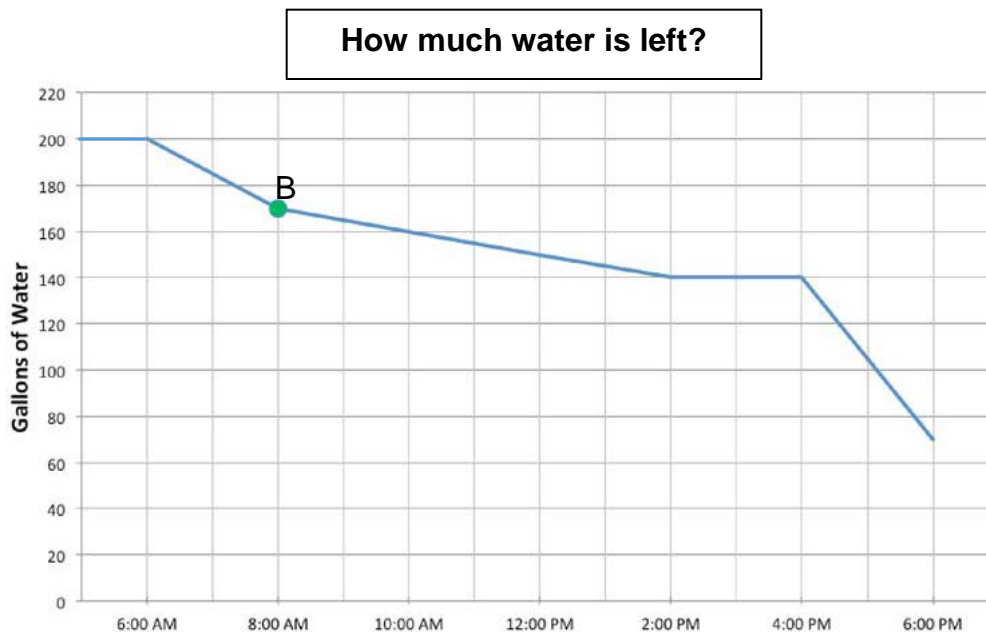
# Final Lift



## End of Vegas

During the drought each household gets a water “allowance” of 200 gallons per day. Below is a graph of how a family used water from 6AM to 6PM on a Saturday.

1. Label the graph at points **where the slope changes**. One point (B) is labeled for you as an example. Label the other points (A, C, and D) where slope changes.



2. Based on the graph, describe how the slope changes **at each point** and what might be happening. An example is provided.

Example: The family starts w/ 200 gallons before 6 am. Between Points A and B, the amount of water decreases. The slope is pretty steep. Perhaps the family is taking showers one after another between 6 & 8 am.

3. Which of the equations below fits segment drawn between 6:00 AM and 8:00 AM? (Circle one answer) Note:  $x$  is the number of hours after 6:00 AM.

a.  $y = 15x$

c.  $y = 200 - 15x$

b.  $y = 15x + 200$

d.  $y = -1$

<sup>1</sup> **Inspiration for Task:** Inspiration for the End of Vegas task came primarily from the Lines and Linear Equations lesson developed by the Math Assessment Resource Services (MARS, 2012); see [link](#).

4. Does the answer you circled above suggest a proportional relationship between  $x$  and  $y$ ? Explain.
  
5. Does the slope of the line on the graph change, or is it constant, between 6:00 AM and 6:00 PM? Explain your thinking.
  
6. If the family cut their water use in half between 6 AM and 8 AM, how would the **line on the graph** change? As part of your answer, explain why you think this.
  
7. If the family cut their water use in half between 6 AM and 8 AM, how would the **equation you selected** change? As part of your answer, explain why you think this.

<sup>1</sup> **Inspiration for Task:** Inspiration for the End of Vegas task came primarily from the Lines and Linear Equations lesson developed by the Math Assessment Resource Services (MARS, 2012); see [link](#).

# Challenge

---

The mayor of LA challenges the mayor of Las Vegas, saying, “We will reduce our water use more than you.” Las Vegas’ mayor accepts the challenge. During the next year:

- LA cuts water use from **123 gallons to 61 gallons per person per day**.
- Las Vegas cuts water use from **219 to 139 gallons per person per day**.

Los Angeles has about 15 million residents; Las Vegas has about 2 million residents. Who cut their water use more? Explain your reasoning.

<sup>1</sup> **Inspiration for Task:** Inspiration for the End of Vegas task came primarily from the Lines and Linear Equations lesson developed by the Math Assessment Resource Services (MARS, 2012); see [link](#).