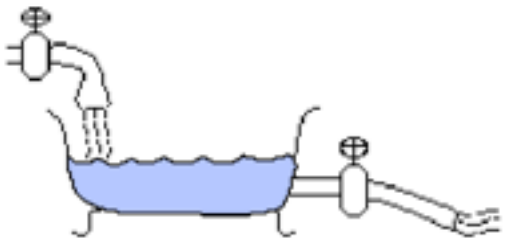
PRE TEST

I. Here you see the image of a bathtub. Water runs into this bathtub through the tap. Meanwhile, water runs out of the bathtub through the drain because it does not seal properly.



a. What happens to the water level if more water is running into the bathtub than out of it? Explain!

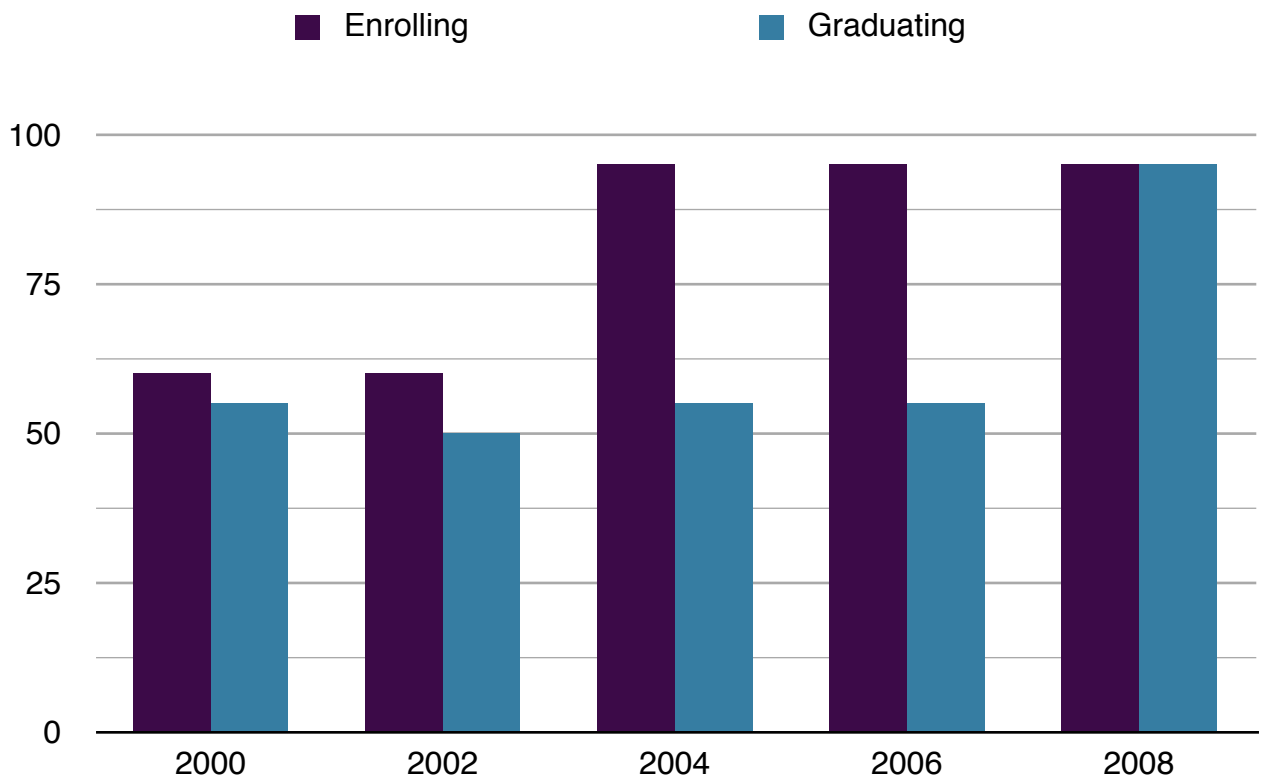
b. What happens to the water level if more water is running out of the bathtub than into it? Explain!

c. What happens to the water level if the same amount of water is running into the bathtub as out of it? Explain!

d. Imagine, ten minutes ago, you started letting water run into the bathtub and you are now satisfied with the water level. What do you have to do in order to keep the current water level constant?

PRE TEST

II. Every year, the number of students enrolled in the school changes: new students are coming in, whilst others are graduating and leaving the school. The figure below depicts the enrollement and graduating each year in a school for the period 2000-2008.

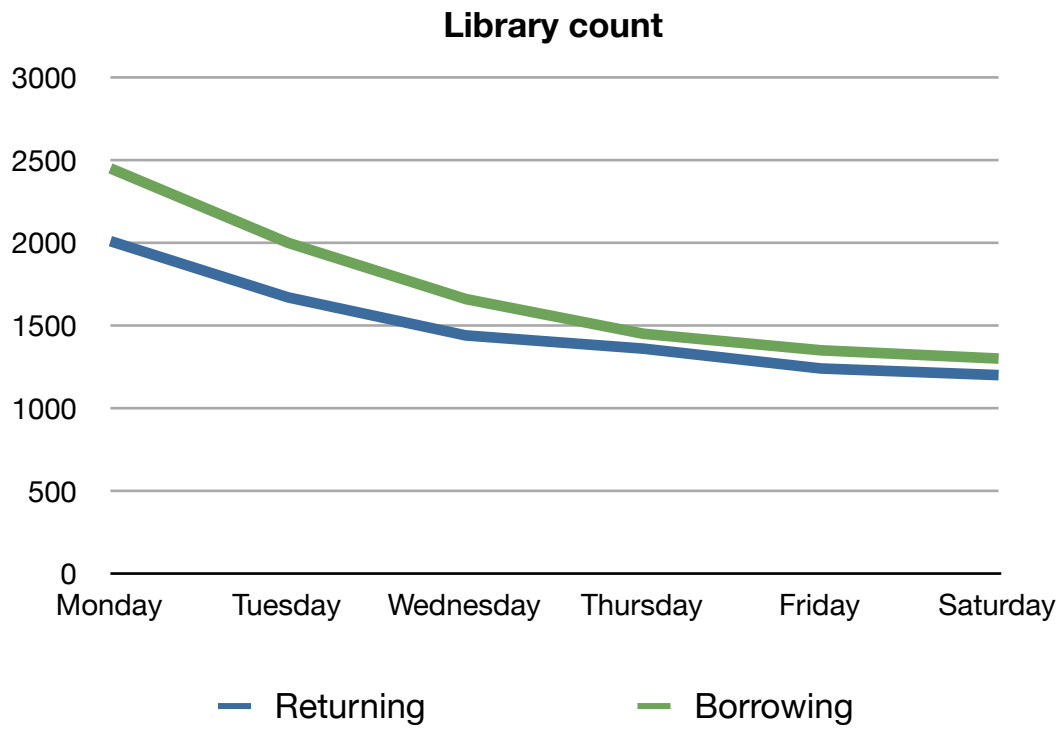


1. How does the students enrollment relate to graduation between 2000 and 2008 in the figure above? Circle the answer you think is right.
   a. More students have been enrolling than graduating
   b. Less students have been enrolling than graduating
   c. The same number of students have been enrolling and graduating

2. If the student enrollement and graduation related to each other as depicted in the figure above, what has happened to the total number of students in the school? Circle the answer you think is right.
   a. The number of students has risen
   b. The number of students has fallen
   c. The number of students has remained the same

3. Let us assume that the principal of that particular school has decided that the total number of students needs to decrease: what would the corresponding trajectories for the enrollement and graduation would have to look like in order to attain the principal´s goal? Circle the answer you think is right.
   a. The number of students enrolling would have to be bigger than the number of students graduating
   b. The number of students graduating would have to be bigger than the number of students enrolling
   c. The number of students graduating would have to be equal to the number of students enrolling.

III. You are the librarian in a library and this week you are part of a project which monitors how many books are in the library at each moment . The total number increases with people returning their books. As people are borrowing books, the number of books is decreasing. The Figure below depicts the borrowing and returning trajectories between Monday and Saturday on that particular week of interest.



PRE TEST

1. How does borrowing relate to returning books between Monday and Saturday in the figure above?Circle the answer you think is right.

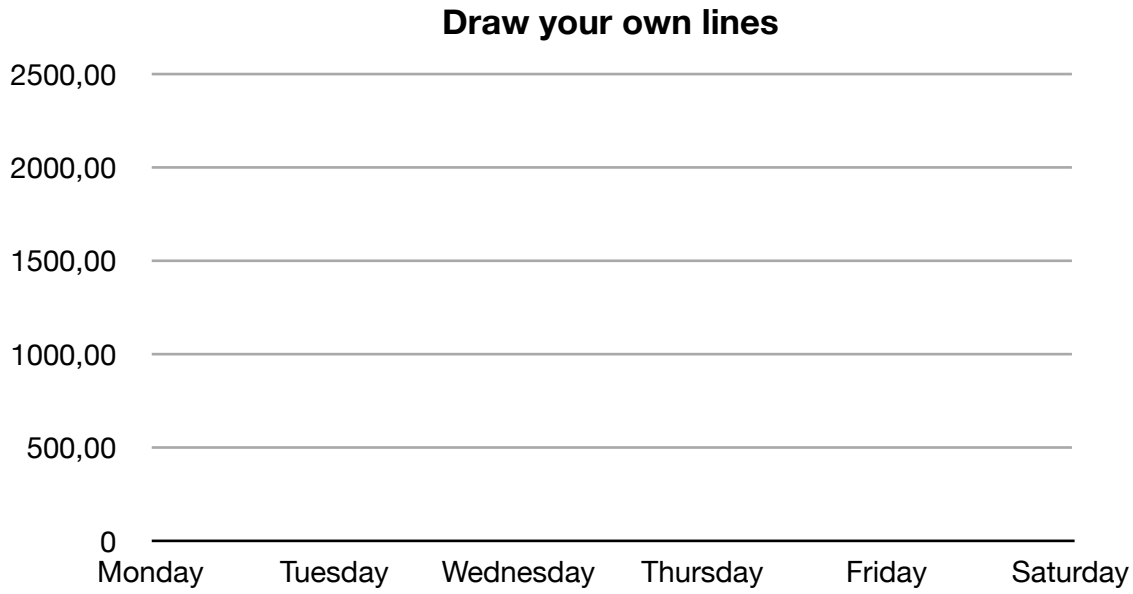
    a. More books have been borrowed than returned
    b. Less books have been borrowed than returned
    c. The number of books borrowed and returned are equivalent

2. If the books borrowing and returning related to each other as depicted in the figure above, what has happened to the total number of books in the library? Circle the answer you think is right.
    a. The number of books has risen
    b. The number of books has fallen
    c. The number of books has remained the same

3. If we assume that the number of books needs to increase at the end of the week count: what would the corresponding trajectories for the borrowing and returning would have to look like in order to attain this goal? Circle the answer you think is right.
    a. The number of books borrowed would have to be bigger than the number of books returned
    b. The number of books borrowed would have to be smaller than the number of books returned
    c. The number of books borrowed would have to be equal to the number of books returned.

4. Please sketch your answer to question 3. into the figure below. Draw one line for borrowing and another line for returning trajectories and label them.

PRE TEST


Draw your own lines
2500,00
2000,00
1500,00
1000,00
500,00
0
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday