**The Basic Student Budget**

Cal, Bernie, and Doc are college students on budgets.

Sometimes the three have a little difficulty keeping to their budgets. Their biggest problem is the rent.

The total rent for their apartment is $900, which is split evenly among the three roommates. The rent is due on the last day of each month. The guys don’t get paid until the first day of the next month.

Their landlord has no tolerance for late payments.

Each student had a different amount of money after being paid on April 1. At the end of that day, Cal had $1,100, Bernie had $800, and Doc had $600. As the month goes by, they each occasionally note how much they had left at the end of the day.

The table shows their records so far.

|  |  |  |  |
| --- | --- | --- | --- |
| **Amount of Money Remaining (in dollars)** | | | |
| **Date** | **Cal** | **Bernie** | **Doc** |
| April 3 | 996 | 766 | 570 |
| April 10 | 704 | 698 | 490 |
| April 17 | 440 | 626 | 430 |

1. Sketch and label a graph that accurately represents this situation. (Show all three students on the same graph.)
2. Who will be able to pay his rent on time, and who will not? How do you know?
3. It’s April 21, and there’s a great concert on campus. This would be an extra cost, beyond the three students’ normal expenses. How much, if anything, can each one spend and still have enough for rent money on the morning of April 30?
4. Suppose each roommate actually starts May with the same amount of money with which he started April.

Find an approximate rule for each roommate that will tell him how much money he should expect to have at the end of the *x*th day of May if his spending habits don’t change.