The Federal Budget Deficit 
(Putting the VI’s Financial Problems in Perspective)

Answer these questions using the graph below of Total U.S. Government Budget Surpluses. The graph is based on Table 15.6 of Historical Tables: Budget of the United States Government, Fiscal Year 2001, Executive Office of the President, Office of Management and Budget.

1. On this graph, what is the input?

2. On this graph, what is the output?

3. The title of the graph is Budget Surpluses. When was there actually a surplus?

4. Estimate the amount of debt of the United States in the following fiscal years:
   a. 1968
   b. 1992

5. Ronald Reagan was elected president of the U.S. in 1980 and remained in office through 1988. Describe the budget deficits during his term in office. Include answers to the following questions. What was the situation at the start of his term? At the end?

6. What was the general trend from 1960 to 1992?

7. By approximately how much did the deficit increase between 1980 and 1984? Why does the graph go downward instead of upward when the deficit increases?
8. In what year was the budget deficit worst? Who was president of the United States during the preceding 4 years?

9. In what year was Bill Clinton elected president? Describe the budget surplus or deficit during his years in office.

10. What year is represented by the last point on the graph?

11. The total cumulative deficit of the government of the U.S. Virgin Islands in 1999 was about $300,000,000. The population of the Virgin Islands was about 108,000.
   a. Use this information to find the per capita debt of the USVI in 1999.
   b. Find out what the population of the United States was in 1992. Use it to find the per capita debt in 1992.
   c. Comment on your findings in parts a and b.
   d. Remember the D = RT formula? What does it represent? Notice that it could be written as $R = \frac{D}{T}$. (Why would that say the same thing?) In what way is this similar to the question in parts a and b?

12. Extra credit: Find out what the budget deficit of the state of California was in 1999. Also find out what the population of California was in 1999. Use this information to determine California’s per capita debt in 1999.
Teaching Guide for
The Federal Budget Deficit

Introduction: The purpose of this lesson is to strengthen students’ understanding of the ordering of signed numbers and, in small part, to introduce subtraction of signed numbers. Question 11 helps students develop a general concept of rates.

Students should work in groups of 3 or 4, but each student should complete the assignment her/himself.

Federal debt data for the graph is given in the table below. Do not give the table to students; they are to estimate from the graph. It is supplied here for your comfort.

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<tbody>
<tr>
<td>Surplus in billions of Y2K US$</td>
<td>0.3</td>
<td>-5.9</td>
<td>-25.2</td>
<td>-23.4</td>
<td>-73.7</td>
<td>-73.8</td>
<td>-185.4</td>
<td>-155.2</td>
<td>-290.4</td>
<td>-107.5</td>
<td>104.8</td>
</tr>
</tbody>
</table>

Answers and teaching suggestions:
1. The input is time, in number of years after 1960.
2. The output is amount of money, in dollars, of the federal budget surplus.
4. You have the actual data above, but students will not be able to give such accurate answers. Thus, for 1968, when the deficit was $25,200,000,000, a very good estimate would be somewhere from $20 billion to $30 billion.
5. The budget deficit more than doubled during Reagan’s term of office, going from about $70 billion in 1980 to more that $150 billion at the end of his second term. It was even worse at the end of his first term, when the U.S. Government’s “negative surplus” was about -185,000,000,000.
6. Students might answer in various ways. For example: deeper and deeper in debt; higher and higher deficits; graph has a downhill trend.
7. Approximately $115,000,000,000. The graph goes down because the negative numbers are getting farther and farther below zero.
8. George Bush, Sr., was in office from January 1989 through December 1991.
9. Clinton was elected in 1992. When he took office, the deficit was close to $300,000,000,000. By the end of his 8 years in office, there was a budget surplus of $100,000,000,000. (Students may want to discuss the relative fiscal responsibility of the presidents. They may also wish to discuss whether it was wise to have such a large surplus at the end of the Clinton years or whether the funds should have been spent on education or other social concerns.)
10. The year 2000 is the last year represented on the graph.

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11. Notice that problem 11 discusses another rate: dollars/person. This is worth discussing with students.

a. Since the total cumulative deficit of the government of the U.S. Virgin Islands in 1999 was about $300,000,000 and the population of the Virgin Islands was about 108,000, the VI’s per capita debt in 1999 was $\frac{300,000,000}{108,000 \text{ people}} \approx \$2777.78/\text{person}$.

b. In 1992, the population of the United States was about 259,310,000. From the graph, students know that the federal debt was about $290,000,000,000. So the per capita debt was $\frac{290,000,000,000}{259,310,000 \text{ people}} \approx \$1118.35/\text{person}$.

c. Students are to comment on the findings in parts a and b. They might comment on the mathematics of finding a rate. They will probably also comment on the comparison of the debts per person. The VI debt in 1999 was significantly higher than the national debt in 1992. But that the national debt should be as high as it is tends to be something of a shock to students, as they usually think that such problems are peculiar to the poor management of their own local government or possibly a result of relative impoverishment. That the US debt should be in the same ballpark can be eyeopening.

d. The $D = RT$ formula, representing distance = rate x time, can be solved for $R$ by dividing each of the two equal expressions by $T$. Certainly if $D$ and $RT$ are equal, dividing that one value by $T$ will give you the same result both times you do it. So we agree that $R = \frac{D}{T}$. This is a “speed”, a rate of distance traveled with respect to time, with units like \(\text{miles/hour}\) or \(\text{kilometers/hour}\) or \(\text{meters/second}\) (etc.). This is similar to the question in parts a and b in that those are also rates. In a and b, we might write $R \text{ dollars/person} = \frac{D \text{ dollars}}{P \text{ people}}$. The concept of rate is extremely important; it will help students build a foundation understanding if you spend the time it takes to help students see these relationships.