MAKING SENSE OF MATHEMATICS

1. You have a credit card with an Annual Percentage Rate (APR) of $24.9 \%$ and a balance of $\$ 1594.25$. You decide it is time to get your credit card debt paid off, so you stop making purchases on this card and start making the minimum payment each month. Study the table below to see what happens the first six months of your plan. The interest charge is based on the average monthly balance for each month.

| Month | Current <br> Balance | Minimum Due | Balance After <br> Payment | Interest <br> Charge | New Balance |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | $\$ 1594.25$ | $\$ 63.77$ | $\$ 1530.48$ | $\$ 31.97$ | $\$ 1562.45$ |
| 2 | $\$ 1562.45$ | $\$ 62.50$ | $\$ 1499.95$ | $\$ 31.33$ | $\$ 1531.28$ |
| 3 | $\$ 1531.28$ | $\$ 61.25$ | $\$ 1470.03$ | $\$ 30.70$ | $\$ 1500.73$ |
| 4 | $\$ 1500.73$ | $\$ 60.03$ | $\$ 1440.70$ | $\$ 30.09$ | $\$ 1470.79$ |
| 5 | $\$ 1470.79$ | $\$ 58.83$ | $\$ 1411.96$ | $\$ 29.49$ | $\$ 1441.45$ |
| 6 | $\$ 1441.45$ | $\$ 57.66$ | $\$ 1383.79$ | $\$ 28.90$ | $\$ 1412.69$ |

a. How much did you make in payments during the last six months?
b. What is the difference between your starting balance and your balance at the end of the sixth month?
c. Why is there a difference between your answers for part a and part b?
d. You continue to make the minimum payment without additional purchases or fees. Estimate how long it will take to pay off the card. Explain how you determined your estimate. You do not have enough information to get an exact answer.
2. By law, credit card statements must provide a "Minimum Payment Warning" similar to the one below.

## Minimum Payment Warning

If you make only the minimum payment each period, it will take you longer to pay off your balance and you will pay more in interest.

| If you make no additional <br> charges using this card and <br> each month you pay ... | You will pay off the balance <br> shown on this statement in <br> about ... | And you will end up paying <br> an estimated total of $\ldots$ |
| :--- | :--- | :--- |
| Only the minimum <br> payment | 9 years | $\mathbf{\$ 2 9 6 7 . 3 9}$ |
| $\mathbf{\$ 6 4 . 0 0}$ | 3 years | $\$ 2218.59$ <br> (Savings $=\mathbf{7 4 8 . 8 0}$ |

You decide you want to pay off this credit card debt in three years, so you stop making purchases on this card and make a $\$ 64.00$ payment on time.
a. Your next statement also includes the "Minimum Payment Warning." Which of the cells in the bottom two rows will change on the next statement? Why?
b. How might the "Minimum Payment Warning" be misleading to a person who stops making purchases and wants to pay off the card in three years?
c. After making a $\$ 64.00$ payment each month for several months in a row, you use this credit card to make a $\$ 200$ purchase. What should your next payment be in order to stay on track and pay off the card in a total of three years?

