

### When will the chocolate milk run out?

Here is the invoice for chocolate milk purchases at school. Use this invoice to answer these questions.

Items	Quantity	Price (USD)	Amount
Account Deposit	1	(\$30.00)	(\$30.00)
Chocolate Milk	1	\$0.70	\$0.70
Chocolate Milk	1	\$0.70	\$0.70
Chocolate Milk	1	\$0.70	\$0.70
Chocolate Milk	1	\$0.70	\$0.70
Chocolate Milk	1	\$0.70	\$0.70
<b>Total:</b>			<b>(\$26.50)</b>
<b>Amount Due (USD):</b>			<b>(\$26.50)</b>

1. What will the balance be after purchasing 1, 2, 3, 4, 5, 6, 7 and 8 chocolate milks? Use an effective way to organize the information to answer this question.

2. After how many chocolate milks will this account run out of money? How do you know?

3. Write an equation to model the balance remaining after buying any number of chocolate milk. Explain what each part of the equation (variables, constants, and operations) represents

4. Draw a graph that models the relationship between the number of chocolate milks and the balance. Does it include all the key parameters?

5. How do you see the parts of your equation in your graph? Color-code them. For example, color-code the rate of change in the equation, graph, and table.

6. At this rate how much do you think a whole school year's worth of chocolate milk costs for this account? Explain.

7. Let's say you can only deposit money in increments of \$10; Determine the possible initial deposit so that your account balance reaches exactly \$0 after purchasing chocolate milks. Would you consider making such a deposit? Why or why not? Discuss your reasoning and any factors that would influence your decision.