Using Linear Relations to Solve Problems

Let's write equations for real-world situations and think about their solutions.

26.1 Writing Equations

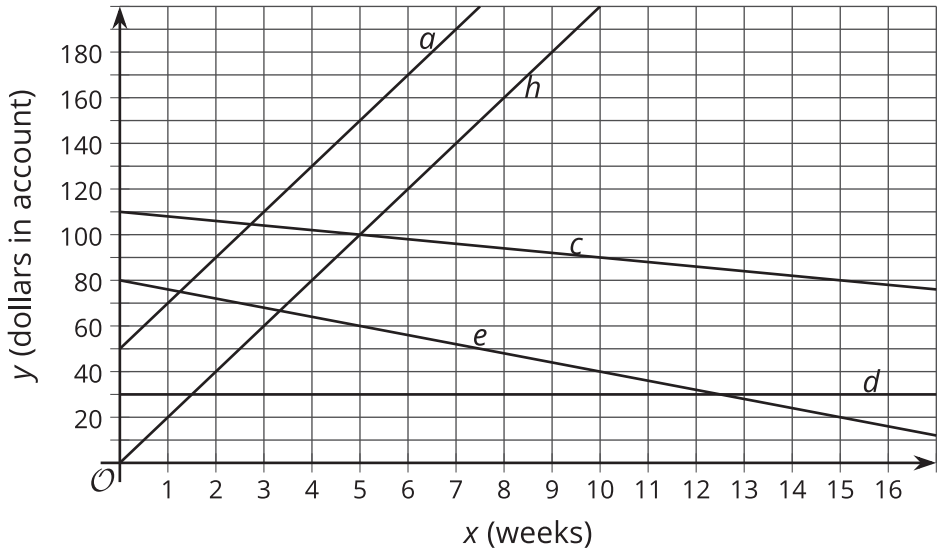
Write an equation to represent each relationship.

1. Grapes cost \$2.39 per pound. Papayas cost \$1.34 per pound. There are only \$15 to spend on g pounds of grapes and p pounds of papayas.

2. A savings account has \$50 in it at the start of the year and \$20 is deposited each week. After x weeks, there are y dollars in the account.

26.2 Five Savings Accounts

Each line represents one person's weekly savings account balance from the start of the year.



1. Choose one line and write a description of what happens to that person's account over the first 17 weeks of the year. Do not tell your group which line you chose.

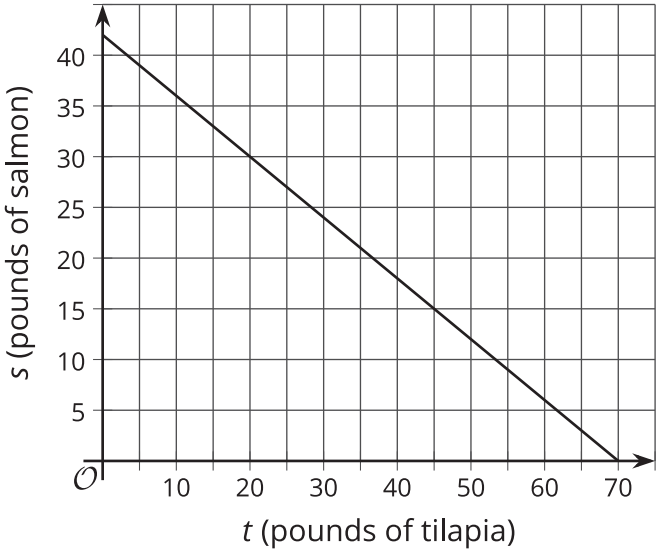
2. Share your story with your group and see if anyone can guess your line.
3. Write an equation for each line on the graph.

4. Predict the balance in each account after 20 weeks.

5. For which equation is $(5, 100)$ a solution? What does this solution represent in this situation?

26.3 Fabulous Fish

The Fabulous Fish Market orders tilapia, which costs $3 per pound, and salmon, which costs $5 per pound. The graph shows how much of each type of fish can be purchased if the market budgets to spend $210 on this order each day.



1. Write an equation that represents the relationship between pounds of tilapia, t, and the pounds of salmon, s, that can be purchased for $210.

2. On the graph, plot and label the combinations A-F.

	A	*B*	*C*	*D*	*E*	*F*
pounds of tilapia	5	19	27	25	65	55
pounds of salmon	36	30.6	25	27	6	4

3. Which of these combinations is a possible order if the market plans to spend its entire budget of $210? Explain your reasoning.