



# 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.

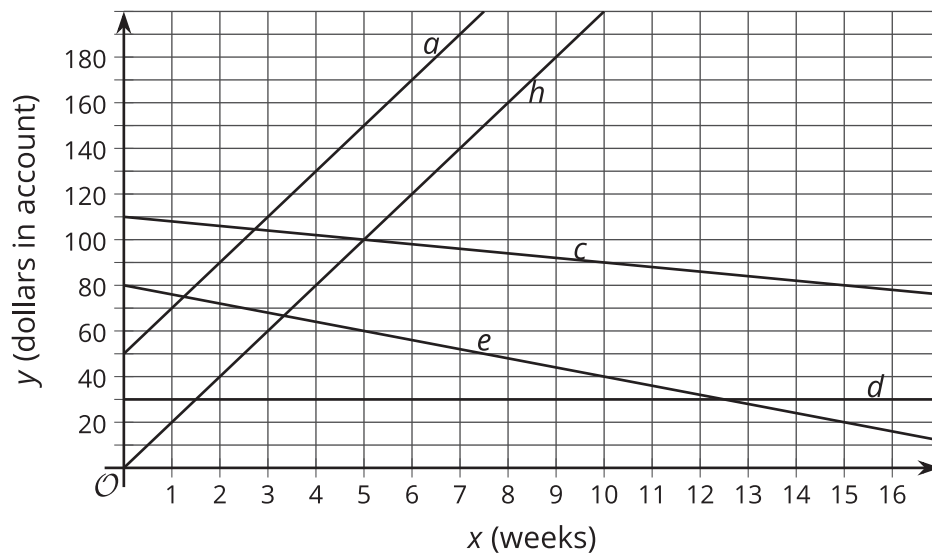
1. Grapes cost \$2.39 per pound. Papayas cost \$1.34 per pound. There are only \$15 to spend on  $g$  pounds of grapes and  $p$  pounds of papayas.
2. A savings account has \$50 in it at the start of the year and \$20 is deposited each week. After  $x$  weeks, there are  $y$  dollars in the account.



## 26.2

## Five Savings Accounts

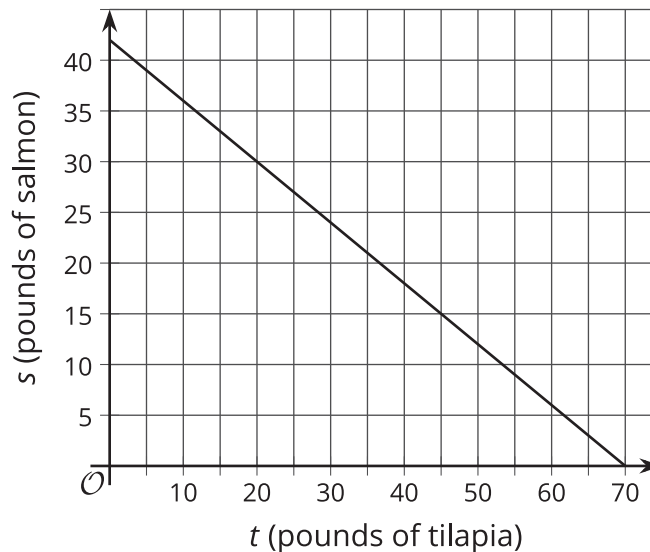
Each line represents one person's weekly savings account balance from the start of the year.



- 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.
- Share your story with your group and see if anyone can guess your line.
- Write an equation for each line on the graph.
- Predict the balance in each account after 20 weeks.
- 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.



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

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