

Use a Spreadsheet

Suppose you want to buy new clothes with a gift card. How many items of clothing can you buy? Will you use all the money on the card? Complete the activity given a fixed cost of jeans and t-shirts.

Exercise 1

T-shirts sell for \$11.95 and jeans sell for \$24.95. In order to determine how many of each you can buy, you need to set up an equation.

Use the table below to determine the equation for the cost of buying t-shirts and jeans. You might find it helpful to show all your work in the Total Cost column. The first two rows are examples.

Amount of T-shirts	Amount of Jeans	Total Cost
1	1	$11.95(1) + 24.95(1) = 36.90$
1	2	$11.95(1) + 24.95(2) = 61.85$
1	3	
2	1	
T	J	

This process can become very tedious and it may take a while to see a pattern. It will be much more efficient to use the HP 39gs to make the computations quicker and easier. You can discover a formula by looking at more quantities of t-shirts and jeans.

Exercise 2

a. Use your HP 39gs to make a more complete table. You should receive the SPREADSHEET Aplet from your teacher or another student. Once you have the Aplet, press the NUM key to fill in the table.

Amount of T-shirts	Amount of Jeans	Total Cost
1	1	$11.95(1) + 24.95(1) = 36.90$
1	2	$11.95(1) + 24.95(2) = 61.85$
1	3	
2	1	
2	2	
3	1	
3	2	
4	1	
5	3	
5	6	
<i>T</i>	<i>J</i>	

b. What is the cost (C) for purchasing T number of t-shirts and J number of jeans?

Exercise 3

Instead of storing various values into variables, you can use the Solve Aplet to answer questions about how many of each item you can buy.

Press the APLET key and choose SOLVE (see Figure 3 below). The Aplet starts in symbolic mode. For E1, enter $11.95T + 24.95J = C$ (see Figure 4 below).

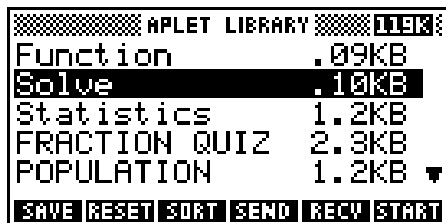


Figure 3

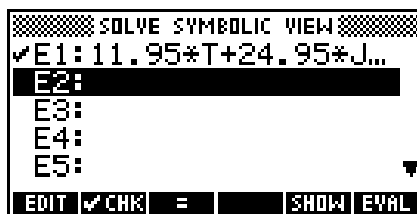


Figure 4

Press the NUM key and enter values for T and J . Highlight C , keeping in mind the value shown does not matter (see Figure 5 below). When you press the SOLVE menu key, the cost (C) will be shown on the screen (see Figure 6 below).

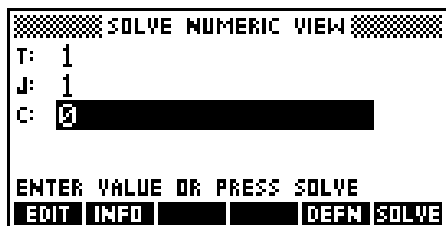


Figure 5

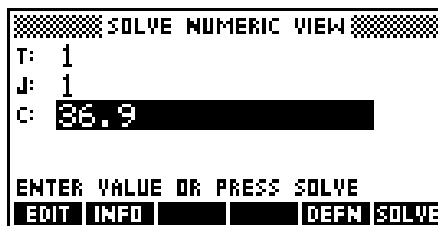


Figure 6

- Verify your values from the table in Exercise 1.
- How many complete outfits, consisting of a pair of jeans and a t-shirt, can you buy with a \$50 gift card? Will there be money left on the card? If so, how much money is left?
- How many complete outfits can you buy with a \$100 gift card? Will there be money left on the card? If so, how much money is left?
- Suppose you want to use as much of the \$50 gift card as possible. Set $C = 50$ and $J = 1$. How many t-shirts can you buy? What does your calculator screen show? What does that number mean?
- Now set $C = 50$ and $T = 1$. How many pairs of jeans can you buy? What does your calculator screen show? What does that number mean?

Exercise 4

Suppose you also need shoes to wear with your new clothes.

a. What is the equation if the cost of shoes is \$9.95?

Change the equation you have in the SOLVE Aplet from Exercise 3 to include the cost of shoes.

b. What is the largest number of items you can buy with a \$50 gift card? Will there be money left on the card? If so, how much money is left?

c. Rather than buying the largest number of items, what if you want to buy the same quantity of everything. What can you buy with a \$50 gift card? Explain your answer.

d. What is the largest number of items you can buy with a \$100 gift card? Will there be money left on the card? If so, how much money is left?

e. Rather than buying the largest number of items, what if you want to buy the same quantity of everything. What can you buy with a \$100 gift card? Explain your answer.

f. Choose a partner and let $C = 100$. Choose two quantities for two other variables and solve for the third variable. Your partner should try to guess how many of the third item can be bought. Switch and let your partner input values while you guess the value of the third item.