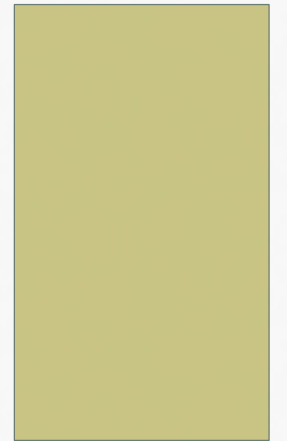


SOLVING EQUATIONS RELATED TO LINEAR FUNCTIONS

CALCULATOR PROCEDURE

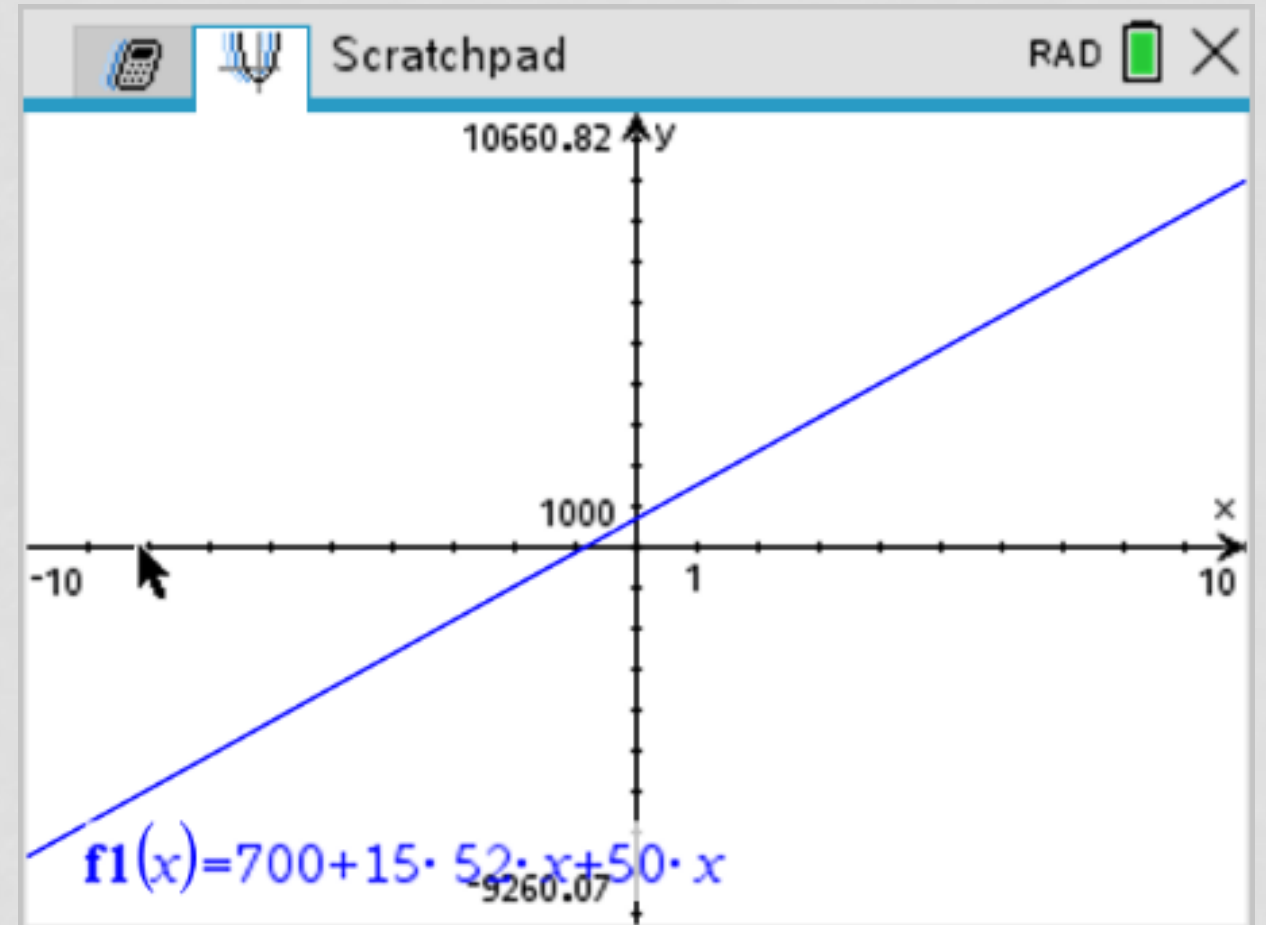


EXAMPLES

- Isabel is saving money for a used car. So far, she has \$700 in her savings account. She plans to deposit \$15 each week from her part-time job and her grandparents give her \$50 on her birthday each year. The goal is to earn \$3,000 by the time she graduates from high school. Will she be able to meet that goal in three years?

EXAMPLES

- **STEP 1** Write a function that models Isabel's savings.
- $s(x) = 700 + 15(52)x + 50x$.
- In the calculator:
- Add graph
- Type in function
- MENU, 4, A → fits graph so you can see it

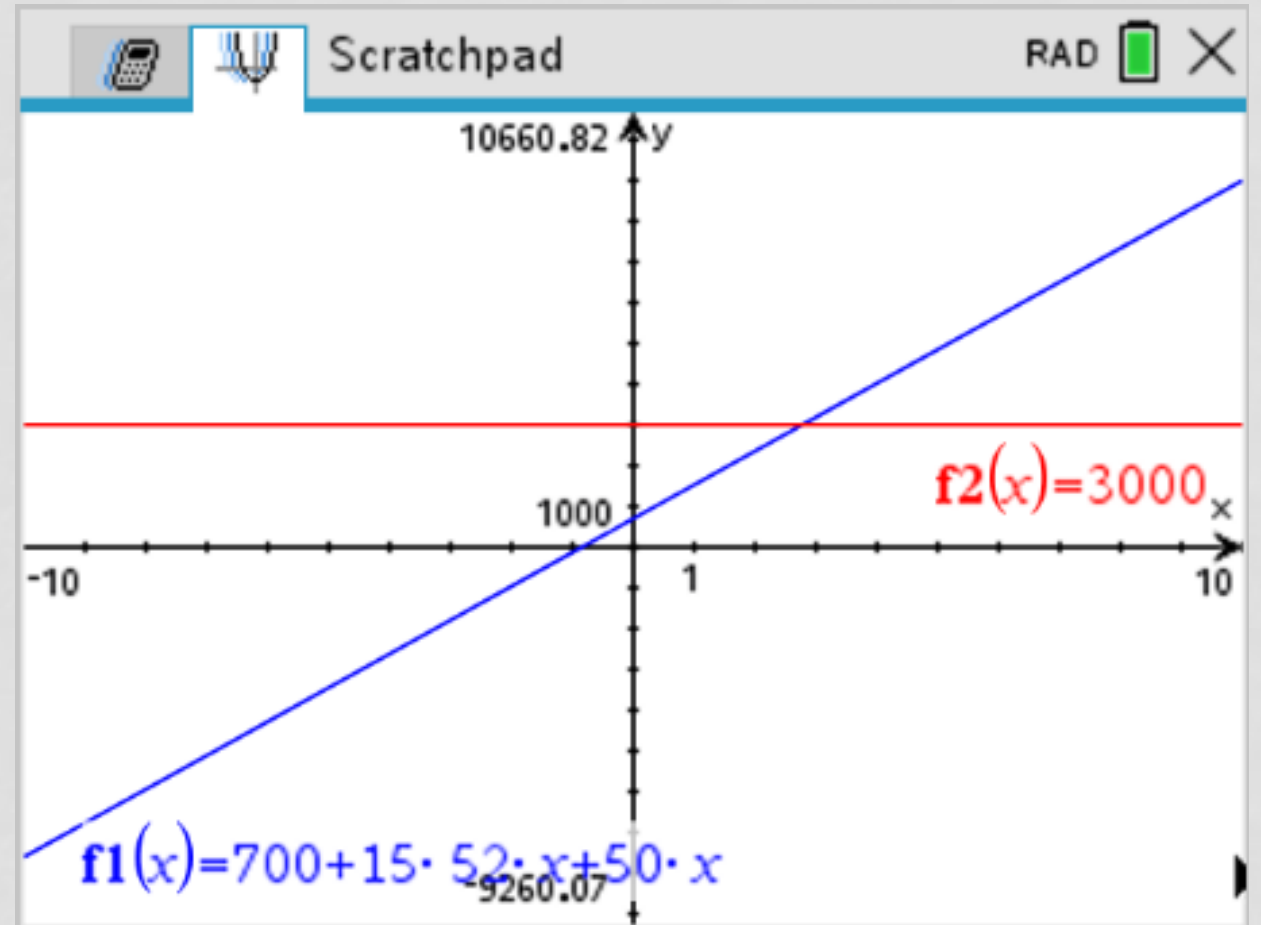


EXAMPLES

- **STEP 2** Write an equation for the amount of savings, \$3000, which Isabel has for a savings goal.

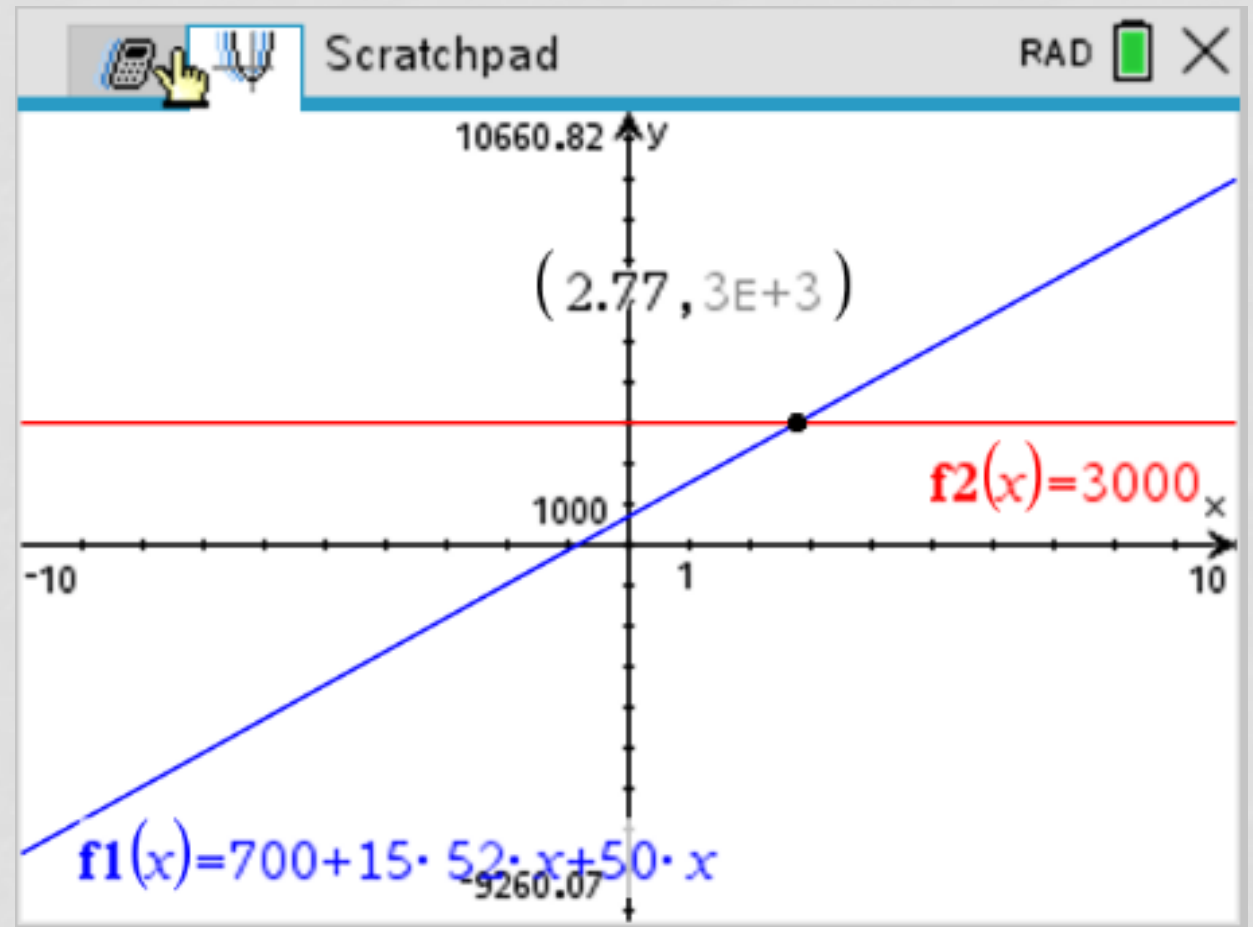
- $y = \$3000$

- In the calculator:
- Tab → this takes you back to the function editor
- Type 3000



EXAMPLES

- **STEP 3** Find the intersection
- In the calculator:
- Type Menu, 6, 4
- Lower bound: place cursor to left of intersection
- Upper bound: place cursor to right of intersection
- You will now get the intersection



EXAMPLES

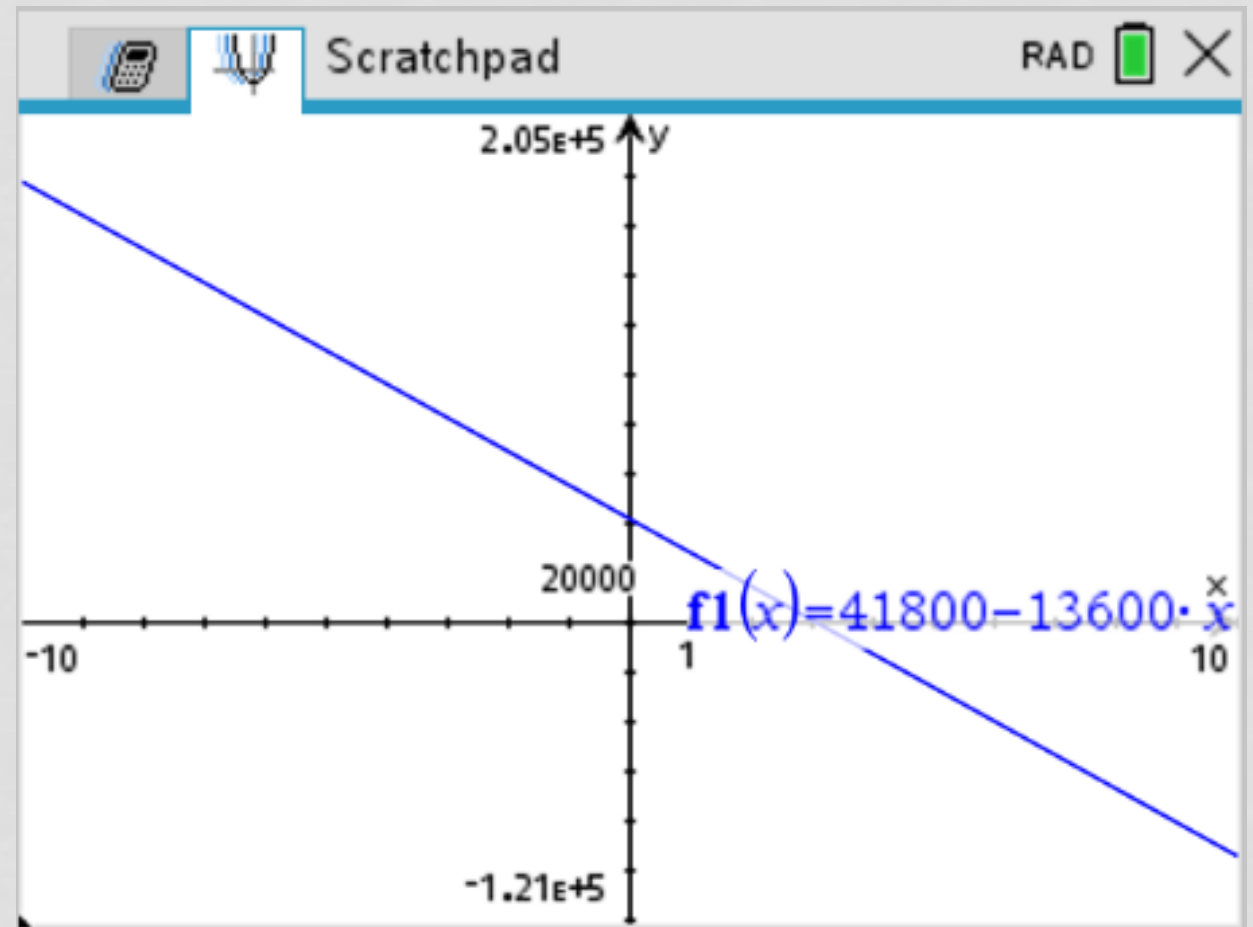
- The x-value for the ordered pair gives how long it will take to earn the money for the car, which is less than 3 years.

EXAMPLES

- Lia won \$45,500 for her prize steer at the state fair. She is going to use the money to buy a used car for \$3,700 and to go to a state university away from home. Her yearly expenses will be \$4,800 for tuition and books and \$5,800 for room and board. Lia estimates that she will spend another \$3,000 for gasoline, insurance, and incidentals each year. Will her prize money last throughout the 4 years of college? Write a function, $f(x)$, to represent how much money Lia will have left after each year, x , and make a table of function values. Then write a related equation with the output value of zero to find out when she will be out of money and solve the problem tabularly.

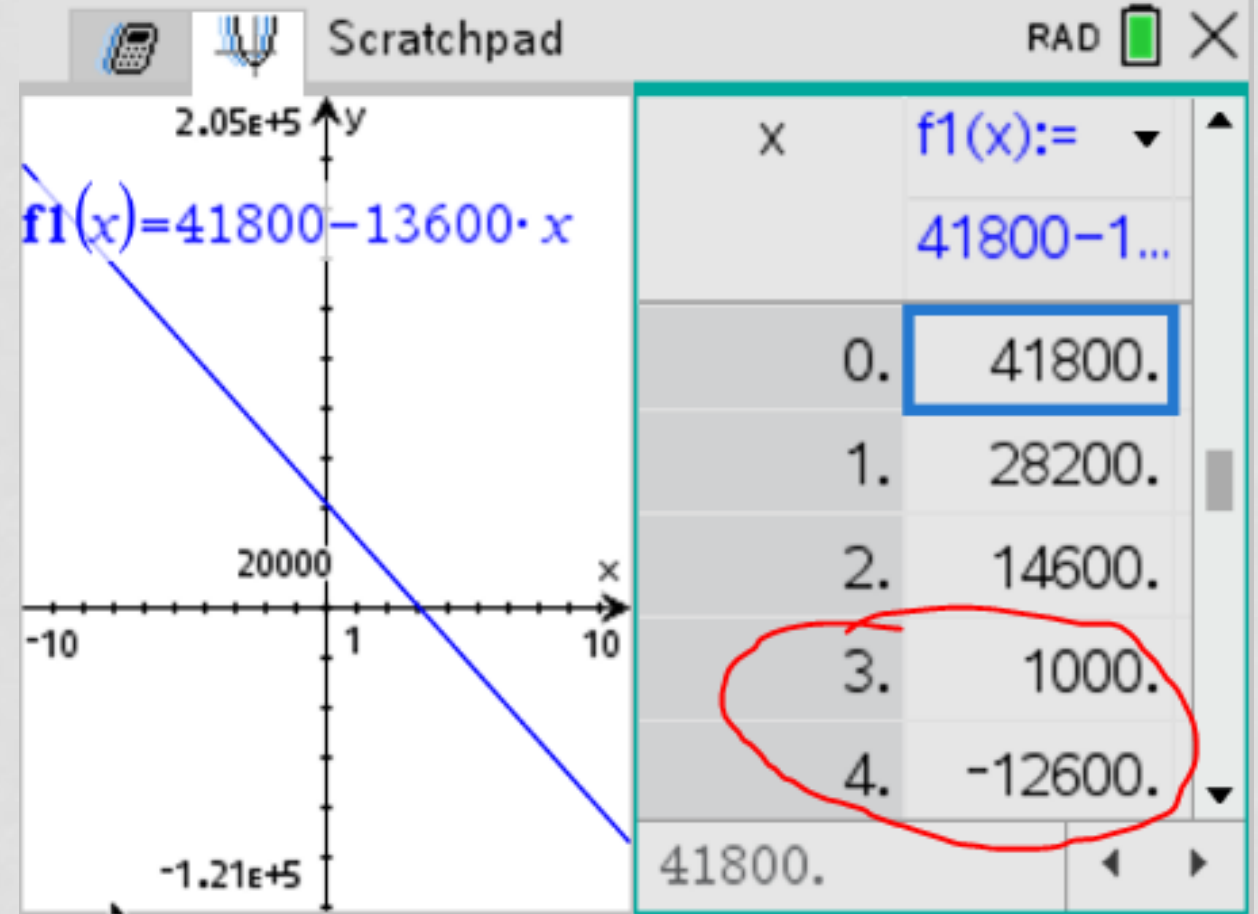
EXAMPLES

- **STEP 1** Write a function to represent the money Lia will have left after each year of college.
- $f(x) = 41,800 - 13,600x$
- In the calculator:
- Add graph
- Type in function
- MENU, 4, A → fits graph so you can see it



EXAMPLES

- **Step 2** Create a table with the values for the function.
- In the calculator:
- **ctrl T** to get to the table
- “Will her prize money last throughout the 4 years of college?”
- Look at the table. Between 3 and 4, the numbers go from positive to negative. This means she runs out of money before 4.



EXAMPLES

- Since she runs out of money before the 4 years, then her prize money will not last throughout the 4 years of college