

True or False?

Megan Selbach-Allen, Pranav Nuti, Shintaro Fushida-Hardy

SSEA 2022

1 Goals

The goals of this activity are:

1. To help students understand that to show that a statement is false, a single counter-example suffices.
2. To help students identify common errors made while performing algebraic manipulations, and to identify a strategy to reduce errors.

2 Materials

For this activity you will need:

1. Handouts
2. White boards (or alternatively, flip chart paper)
3. Markers

3 Instructions

This activity will take approximately 40 minutes.

1. Give students handouts and explain the goals of the activity. Explain the preamble.
2. On white boards, write down problem numbers making sure each problem receives sufficient space, and explain to students that we will be solving all the problems as a class.
3. Give students 10 minutes to think about *any* three problems of their choice on the sheet.
4. Give student 10 minutes to go to the white boards associated with their problems, and write down their solutions. If there is already a solution on the white board, they can discuss their solution with another student by the white board.
5. If at the end, some problems remain unanswered, repeat the process with the unanswered questions.
6. Any unsolved problems are homework.

4 Tips

1. The problems which have “true” as an answer are trickier for students, and they might need more help.
2. Encourage students to try simple counter-examples.