

M101 - Linear Equations: Concepts and Skills

Badge Specific Essential Concepts

- ❖ Solve real-life mathematical problems using linear equations.
- ❖ Write, analyze and solve two-variable equations.
- ❖ Analyze and solve pairs of simultaneous linear equations.
- ❖ Interpret features of a graph of a linear function within the context of the problem.
- ❖ Analyze and compare different representations of linear functions.
- ❖ Apply knowledge of linear equations to real life situations.

Administration Notes

This Pre-Post Badge Task is to be used as a tool for students to understand their learning. When administering this task, it is important to highlight a few things for students:

- Students will have the opportunity to complete the task at the beginning and the end of this badge. This is because we want students to be able to see how much they've learned and reflect on that learning in ways that matter to them.
- The work on the task will not be graded. The task is not a quiz or a test - it is designed to support students in understanding how much they have learned from the beginning of the badge to the end.
- Students can have access to any technology that they typically use during classroom instruction to complete this task.
- Students should work individually on the task.

Please share these things with students, reinforcing the idea that this task has been designed to support them in reflecting on the mathematics they have learned. In some tasks, students may create work in different places. It is helpful for them to have their own online folders to store their pre-post tasks as well as any supporting artifacts, such as screenshots from online tools that they use.

Task Analysis

The purpose of the task analysis section is to report on student performance at the two time points -- how they performed on each question within the task before and after badge instruction. Complete a table for each student based on an analysis of their

responses. You can create summary data for yourself if you choose to understand more globally how students are doing on the concepts measured by the task.

PRE-Badge Task Analysis

Were there any interesting or instructionally useful responses or insights from the student? Please record those here:

Question/Look For	Blank or similar	Emerging	Approaching	Meeting	Other Notes
(2) Student writes an equation and defines each variable within the context of the problem.					
(3) Student determines the amount Luka had and justifies their answer.					
(4) Student interprets features of the graph to determine Raquel's weekly savings.					
(5) Student constructs a variable argument by analyzing and comparing different representations of linear functions.					
(6) Student determines the weeks required to reach \$300.					
(7) Student applies mathematically true reasoning to support a decision.					

(8) a Student interprets and compares features of multiple representations of linear equations to create a viable question.					
(8) b Student interprets and compares features of multiple representations of linear equations to create a viable question.					
(8) c Student interprets and compares features of multiple representations of linear equations to create a viable question.					

POST-Badge Task Analysis

Were there any interesting or instructionally useful responses or insights from the student? Please record those here:

Question/Look For	Blank or similar	Emerging	Approaching	Meeting	Other Notes
(2) Student writes an equation and defines each variable within the context of the problem.					
(3) Student determines the amount Luka had and justifies their answer.					
(4) Student interprets features of the graph to determine Raquel's weekly savings.					
(5) Student constructs a variable argument by analyzing and comparing different representations of linear functions.					

(6) Student determines the weeks required to reach \$300.					
(7) Student applies mathematically true reasoning to support a decision.					
(8) Student interprets and compares features of multiple representations of linear equations to create a viable question.					
(8) b Student interprets and compares features of multiple representations of linear equations to create a viable question.					
(8) c Student interprets and compares features of multiple representations of linear equations to create a viable question.					