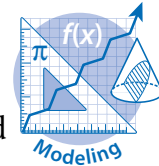


Name: \_\_\_\_\_

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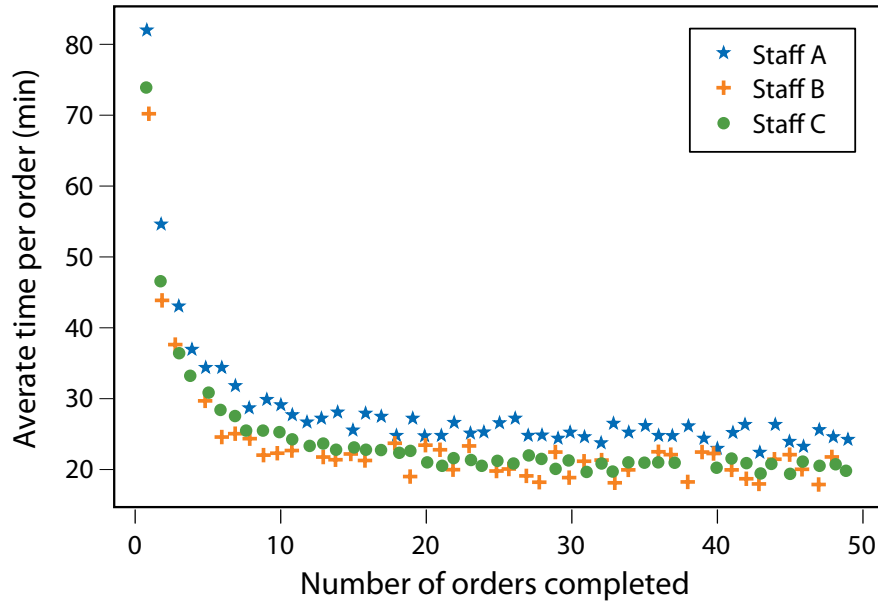
### Conceptual Task: Cooking Up Rational Equations

A high-end restaurant has three complete teams of kitchen staff. The management at the restaurant collects data on all the teams. They record the average time per order over the first 50 orders. Each team spends some initial time preparing the kitchen before they begin serving; this is included in the functions that model the average time per order. The data is shown below in a scatter plot.



SMP	
1	2
3 ✓	4
5	6 ✓
7	8 ✓

Average Time vs. Number of Orders



Team	Average time function
A	$A(x) = \frac{21x + 60}{x}$
B	$B(x) = \frac{16x + 50}{x}$
C	$C(x) = \frac{18x + 55}{x}$

**Name:** \_\_\_\_\_

**Date:** \_\_\_\_\_

## Conceptual Task: Cooking Up Rational Equations

### Exploration Questions

- a. What is being examined here?
  
- b. What are the variables in the graph?
  
- c. What observations can you make of the graph?
  
- d. What are the estimated functions trying to model?
  
- e. What are restrictions on the domain of each function?
  
- f. How could you compare the amount of time each team spends preparing the kitchen and turning out the first order? Explain which part of the graph or estimated functions shows this information.
  
- g. What does the value of the horizontal asymptote say about each team?
  
- h. Explain how you could use the above information to compare the teams.
  
- i. What do you think might cause the differences in the performance of each team?