

## Danny, the Icecream Seller

Think about these changes to the Danny's problem.

How do the changes affect the answers?



### Problem Set One

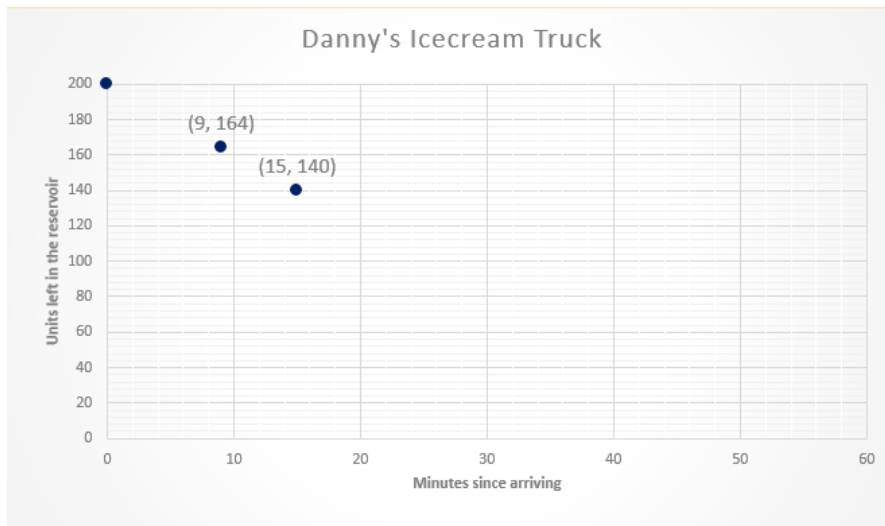
The reservoir still contains 200 units when full.

Here are graphs for four different days.

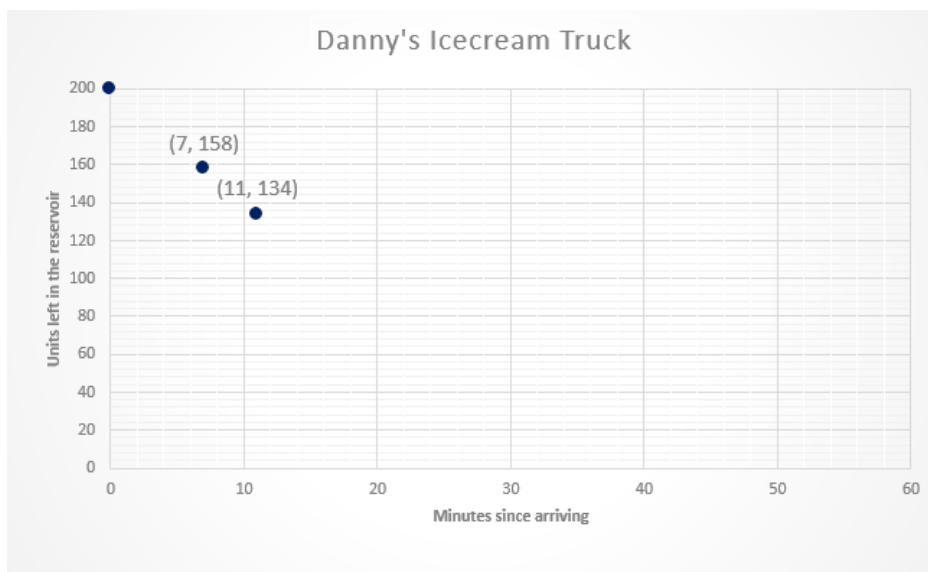
Pay attention to the vertical axis on each graph.

How many minutes will it take for the reservoir to be empty on each day?

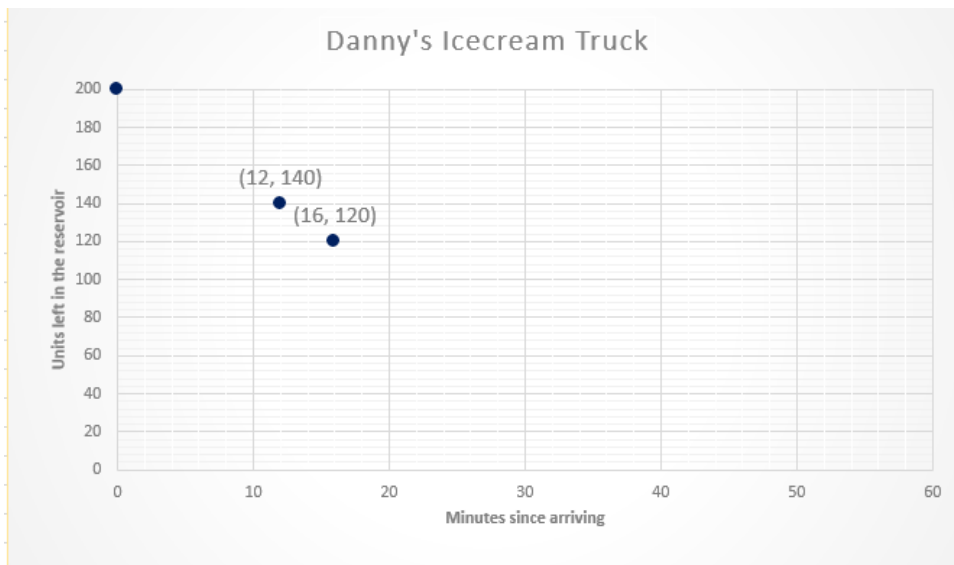
Thursday



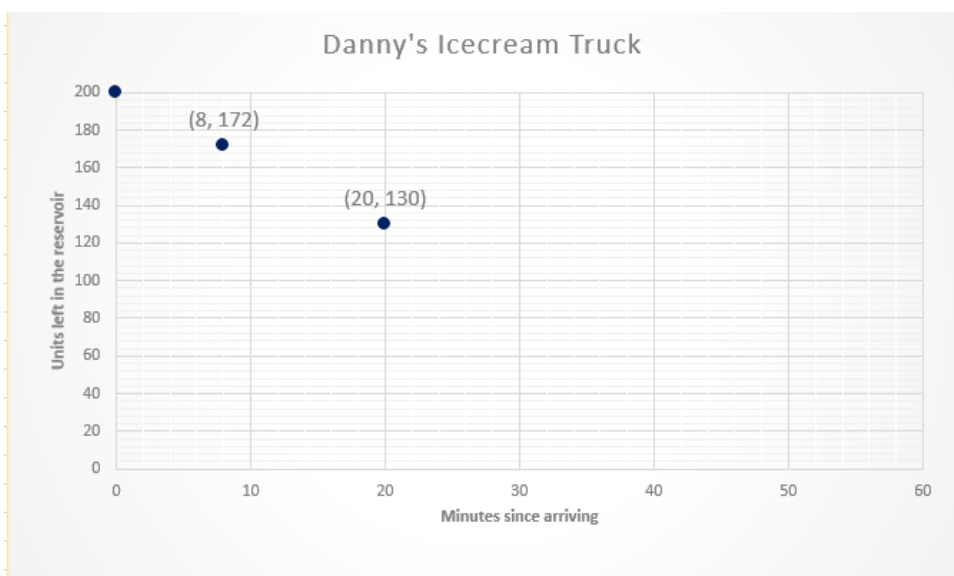
Friday



Saturday



Sunday



If the rate of draining the reservoir increases what happens to the time (t) needed to empty it?

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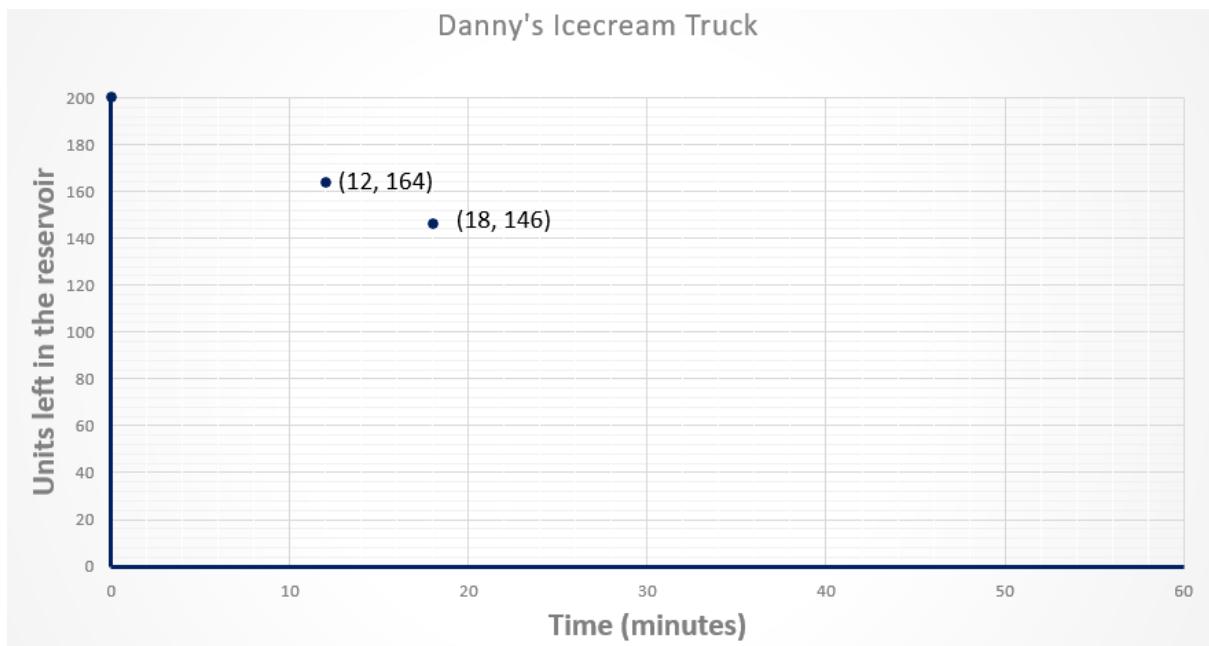
## Problem Set Two

Suppose both the size of the reservoir and the rate change.

Solve these problems.

1. Danny installs a 250-unit reservoir because the last one did not hold enough to last two hours.

Here is the old graph.



Suppose the rate of making icecream stays the same, that is 3 units per minute.

1. How will the graph change to consider the larger reservoir?
2. Create an Excel spreadsheet to solve Danny's problem with a 250-unit reservoir. How many minutes will the reservoir last?
3. At 3 units per minute how big will the reservoir need to be to last two hours?

Solve the problem using an equation and a spreadsheet.