

## Project 1

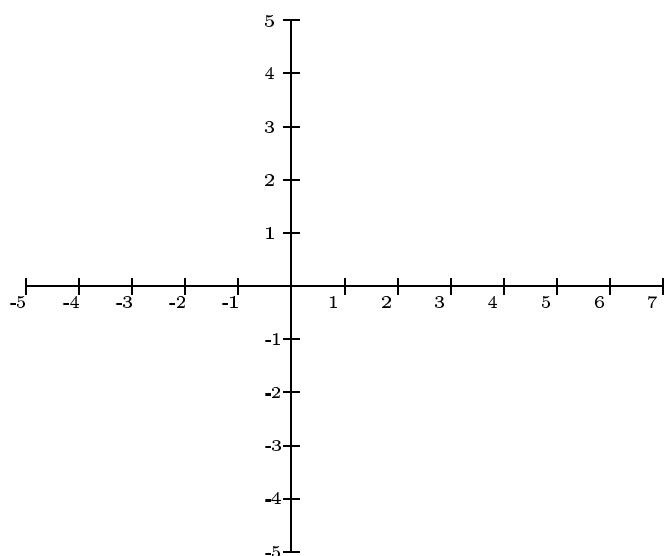
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The spread of a virus is modeled by  $V(t) = -t^2 + 6t - 4$ , where  $V(t)$  is the number of people (in hundreds) with the virus and  $t$  is the number of weeks since the first case was observed.

1. Graph  $V(t)$  on the following set of axes.



2. What is a reasonable domain of  $t$  for this problem?
3. When does the number of cases reach a maximum? What is the maximum number of cases?
4. Find the rate of change function.
5. What is the rate of change in the number of cases at the maximum?
6. Give the sign ('positive' or 'negative') of the rate of change up to the maximum and after the maximum.