



## Rumors, Rumors, Rumors

### Part 1

Burton High School has 1,500 students. During first period, a rumor is started when Susan tells three friends a secret. Each of Susan's three friends tell three of their friends during second period, who in turn tell three different friends during third period. Assume each person tells the rumor to only three others.

Find the number of students who have heard the rumor by the end of the day. Can you find any patterns or generalizations?

### Part 2

In an attempt to discredit the President, a member of the opposite political party wishes to start a scandalous rumor about him. He plans to tell people this rumor one week before Election Day and wants the entire population of the United States (about 250,000,000 people) to know the rumor. He needs to figure out how many people he should tell (and they each tell the same number of people) so that everyone will have heard the rumor by the seventh day.

Find the number of people the evil politician needs to tell so everyone in the United States will have heard the rumor by the seventh day. Remember: Each person needs to tell the same number of people. Be sure to explain how you came up with your answer.