

# CYTOSCAPE QUESTIONS

Name\_\_\_\_\_

Pd.\_\_\_\_\_

## Part I

1. How does your hand drawn network compare to the network on Cytoscape®? How is it different?
2. You and your classmates each created a challenge question about the cell phone network for homework. You should have received another group's challenge question, and you can now answer it using cytoscape.

Write the question here:

Write the answer here:

## Part II

3. Your teacher just decided to give a pop quiz in biology tomorrow. Student 5C heard her mention this in the hall today after school. Answer the following questions assuming that 5C passes the message on to everyone in his/her phonebook then everyone who hears the message passes it on to everyone in their phone book, etc... (you can use the "phone tree" function for this)
  - a. Will the whole class know about the quiz by tomorrow? (*hint: leave the "statistics" window open to answer the next 3 questions*)
  - b. Which person(s) will **receive** the **most** phone calls about the quiz? How many calls does this person receive?
  - c. Which person(s) will **make** the **most** phone calls about the quiz? How many calls does this person make?
  - d. Which person(s) will **make** the **fewest** phone calls about the quiz? How many calls does this person make?
  - e. If one phone call takes 30 seconds to make, how long will it take for the first message to get from 5C to 2A? (show your work)
  - f. If student 4D's phone runs out of batteries and he/she can't make or receive any calls, how many students will find out about the pop quiz?

- g. If student 3E is grounded and can't use his/her phone, how many students will find out about the pop quiz?

### Part III – Using Phone Attributes

4. Sprint PCS's cell phone towers are struck down by a meteorite. Will this change who can call who? Are any groups now isolated from each other? (give examples: can group 6 contact group 1?)
5. Sprint PCS rebuilds its cell phone towers, but one week later AT&T Wireless is bought out and all of its customers temporarily lose their service. Which outage has a bigger impact on our overall cell phone network: Sprint or AT&T Wireless? Explain.
6. Not all of the phones in our classroom network have analog roam capabilities. If our class goes on a field trip to rural Montana (where only the phones **with** roaming capability will work) will this change who can call who in our network?
  - a. List the students that 5C will be able to pass a message to
  - b. Will students in group 7 be able to pass a message to students in group 2?
  - c. Will students in group 7 be able to pass a message to students in group 5?
7. On this field trip, student 3E takes a picture of a cool rock formation and sends it to everyone he/she can (and they, in turn, send it to everyone they can). How many students will receive the picture? (Not all phones can take/send/receive photos)
8. Student 2D receives a funny email and forwards it to everyone in his/her phone book (and they, in turn, forward it to everyone in their phone books). Which students will receive the email forward? (notice not all of the phones have email capabilities)