## Phone calls

- 1. You should start by calling the first person in the class's phone log. Note that your endpoint is currently the end of the phone log.
- 2. You should tell the receiver of the call to start calling students immediately beginning with first person after the halfway point between your starting and ending point. You should also tell the receiver to take note of that their endpoint is your current endpoint.
- 3. You should tell the receiver of the call to tell the people who they call the news and to start calling people immediately begging after the halfway point between their starting and ending point. You should also tell the receiver to tell the people who they call that their endpoint is the receiver's endpoint.
- 4. You should tell the receiver to change their endpoint to be the person they just called's starting point.
- 5. You should also tell the receiver to tell their recipients the news, the method for assigning starting points and endpoints, and how to update their endpoints, so the chain can continue.
- You should end the call.
- 7. You should take note that your endpoint is now the person you just called's starting point.
- 8. If there is still anyone who you haven't call yet on your updated list, then you should call the next person on your list and go back to step two.
  - a. Otherwise, you have placed all the call you needed to and may stop following these steps.

## Bag of coins

- 1. Start a count for the quarters label it something like quarter count and note that it begins at zero.
- 2. Subtract 0.25 from your (remaining) balance

3

- a. Then, If the remaining balance is greater than zero, add one to the quarter count and repeat step 2
- b. Otherwise if the remaining balance is equal to zero, add one to the quarter count and skip to step 10
- c. Otherwise if the remaining balance is negative, add the 0.25 back to your remaining balance and move onto step #4
- 4. Start a count for the dimes label it something like dime count and note that it begins at zero.
- 5. Subtract 0.10 from your (remaining) balance.

6.

- a. Then,If the remaining balance is greater than zero, add one to the dime count and repeat step 5
- b. Otherwise if the remaining balance is equal to zero, add one to the dime count and skip to step 10
- c. Otherwise if the remaining balance is negative, add the 0.10 back to your remaining balance and move onto step #7
- 7. Start a count for the pennies and label it something like penny count and note that it begins at zero
- 8. Subtract 0.01 from your (remaining) balance.

9.

- a. Then, If the remaining balance is greater than zero, add one to the penny count and repeat step 8
- b. Otherwise if the remaining balance is equal to zero, add one to the penny count skip to step 10
- c. Otherwise if the balance is negative, add the 0.01 back to your remaining balance and move onto step #10
- 10. If the remaining balance is equal to zero and the quarter count is less than or equal to 500, the dime count is less than or equal to three, and the penny count is less than or equal to three, then output the number of quarters, dimes, and pennies it takes to make it using the corresponding counts. Otherwise, output that no possible coin combination makes that monetary value

## Maze

- 1. You should sense if there is any blockage in your path.
  - a. If there is blockage, proceed to step 2
  - b. Otherwise, skip to step 4
- 2. You should rotate 90 degrees clockwise and then sense if there is blockage in your path
  - a. If there is blockage, rotate 180 degrees and proceed to step 3
  - b. Otherwise, skip to step 4
- 3. You should sense if there is any blockage in your path
  - a. If there is blockage, rotate 90 degree counterclockwise, and proceed to step 4
  - b. Otherwise, proceed to step 4
- 4. If you have already completed this step four times in a row, then you should move one unit forward and proceed to step 5. Otherwise, you should see if there's blockage or ink (one unit) in front of you.
  - a. If there isn't any blockage, walk one unit forward and proceed to step 5.
  - b. Otherwise, rotate 90 clockwise, and repeat this step.
- 5. You should check to sense if you have reached the doctor's office.
  - a. If you sense that you have reached the doctor's office, then you have completed your mission and can stop walking and following these steps
  - b. Otherwise, you should repeat steps 1-4 until you sense that you have reached the doctor's office.