

# Analyzing the heart with EKG

## Group Names

Name: Maria D, Lucia G, & Julia R

Table 1

| Interval | Time(s) | Heart Rate( bpm) | 60 |
|----------|---------|------------------|----|
| P-R      | .4 s    |                  |    |
| QRS      | .1 s    |                  |    |
| Q-T      | .4s     |                  |    |
| R-R      | 1 s     |                  |    |
|          |         |                  |    |

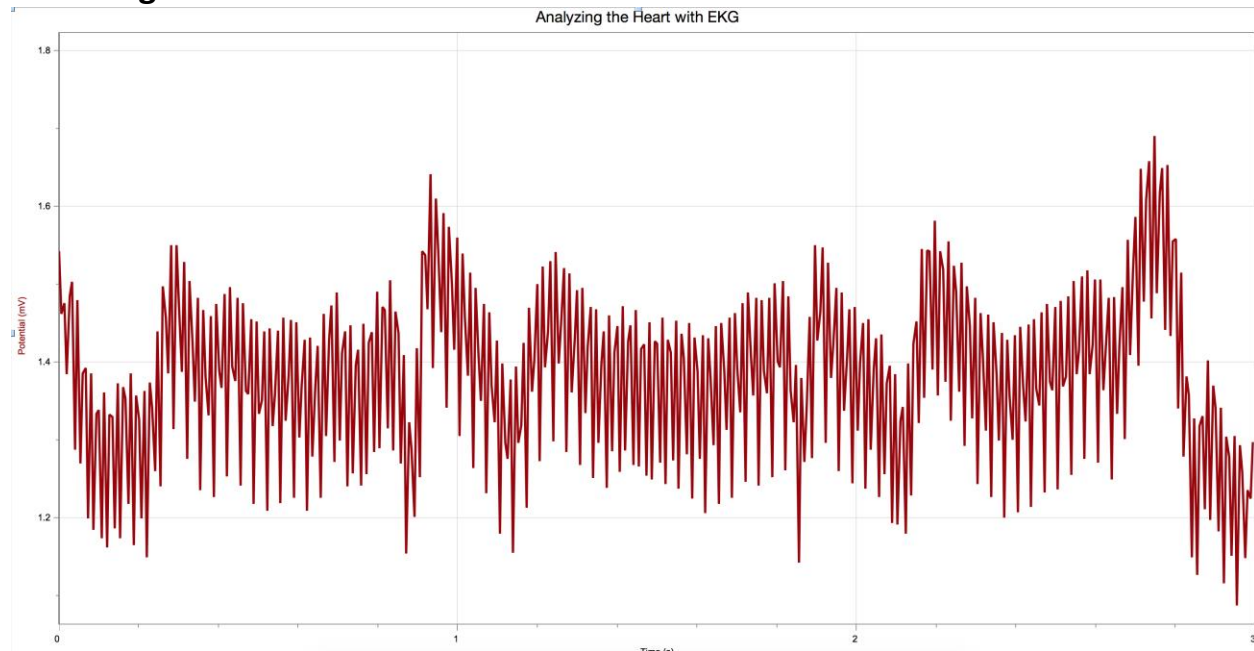
Table 2 Standard Resting Electrocardiogram Interval Times

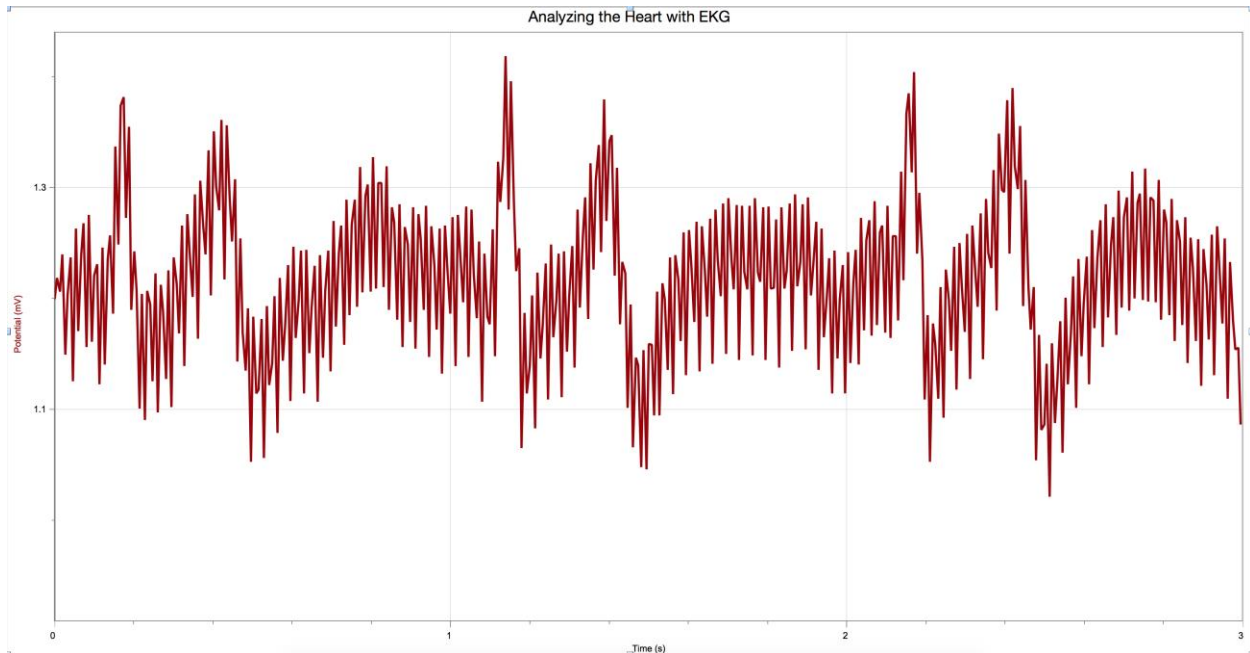
| Interval | Time(s) | Heart Rate( bpm) | 60 |
|----------|---------|------------------|----|
| P-R      | .2 s    |                  |    |
| QRS      | .1 s    |                  |    |
| Q-T      | .4 s    |                  |    |
| R-R      | 1s      |                  |    |

|              |                |
|--------------|----------------|
| P-R interval | 0.12 to .20 s  |
| QRS interval | Less than 0.12 |
| Q-T interval | 0.3-0.4 s      |

### Graphs with Descriptions

This is Julia with the EKG resting heart beat with the alternate placement of the red and green wires.





**This is Princess Julia with the resting EKG heart beat with the normal placement of all wires on her arms.**

### Data Analysis

1. Remember that a positive deflection indicates electrical activity moving toward the green EKG lead. Examine the two major deflections of a single QRS complex (R wave and S wave) in your EKG tracing from Part I of this experiment. According to this data, does ventricular depolarization proceed from right to left or left to right? How does your tracing from Part II confirm your answer?

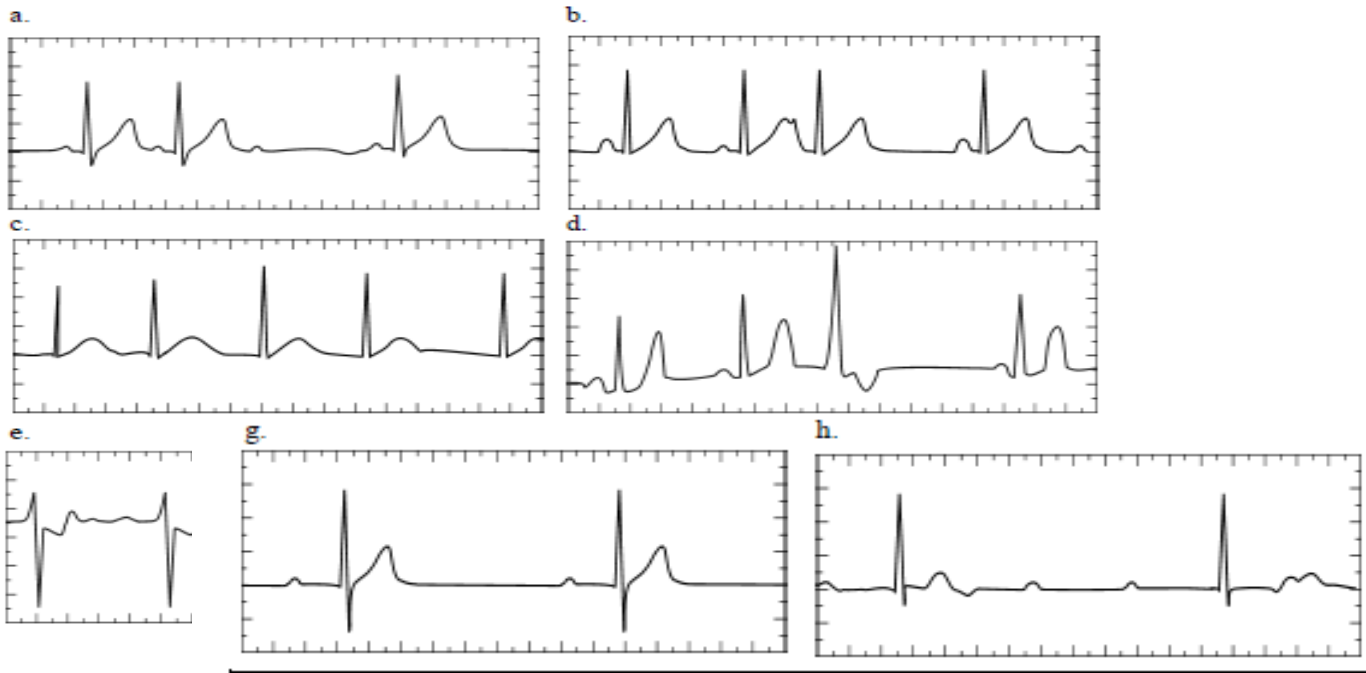
According to the data that we collected we can say that ventricular depolarization happens from the left to the right. We can confirm this because in part II most of the peaks occurred from the left side and decrease in size when moving to the right, this process repeats itself. This illustrates the QRS Complex.

2. Health-care professionals ask the following questions when interpreting an EKG:

- Can all components be identified in each beat?
- Are the intervals between each component and each complex consistent?
- Are there clear abnormalities of any of the wave components?

Using these questions as guides, analyze each of the following three-beat EKG tracings and record your conclusions in Table 3 (indicate presence or absence of the P wave, and whether

other intervals and/or shapes are normal or abnormal). The first analysis (a) is done for you.



|     |       | P Wave |      | PR interval |          | QRS Interval |          | QRS Shape |      | TWave Shape |           |
|-----|-------|--------|------|-------------|----------|--------------|----------|-----------|------|-------------|-----------|
| ECG | Beats | Pres.  | Abs. | Nml         | Abs./Abn | Nml          | Abs./Abn | Nml       | Abn. | Nml         | Abs./Abn. |
| a   | 1     | X      |      | X           |          | X            |          | X         |      | X           |           |
|     | 2     | X      |      | X           |          | X            |          | X         |      | X           |           |
|     | 3     | X      |      |             | X        |              | X        |           | X    |             | X         |
| b   | 1     | X      |      | X           |          |              | X        |           | X    | X           |           |
|     | 2     | X      |      | X           |          |              | X        |           | X    |             | X         |
|     | 3     | X      |      |             | X        |              | X        |           | X    | X           |           |
| c   | 1     |        | X    |             | X        |              | X        |           | X    |             | X         |
|     | 2     |        | X    |             | X        | X            |          |           | X    |             | X         |
|     | 3     |        | X    |             | X        | X            |          |           | X    |             | X         |
| d   | 1     | X      |      | X           |          | X            |          |           | X    |             | X         |
|     | 2     |        | X    |             | X        | X            |          |           | X    |             | X         |
|     | 3     |        | X    |             | X        |              | X        |           | X    |             | X         |
| e   | 1     |        | X    |             | X        | X            |          |           | X    |             | X         |
|     | 2     | X      |      | X           |          | X            |          |           | X    |             | X         |
|     | 3     | X      |      | X           |          | X            |          |           | X    |             | X         |

|   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|
| f | 1 | X |   | X |   | X |   | X |   |   | X |
|   | 2 | X |   | X |   | X |   | X |   |   | X |
|   | 3 | X |   | X |   | X |   | X |   |   | X |
| g | 1 | X |   |   | X | X |   | X |   | X |   |
|   | 2 | X |   |   | X | X |   | X |   | X |   |
|   | 3 |   | X |   | X |   | X |   | X |   | X |
| h | 1 |   | X |   | X | X |   |   | X |   | X |
|   | 2 |   | X |   | X | X |   |   | X |   | X |
|   | 3 |   | X |   | X |   | X |   | X |   | X |