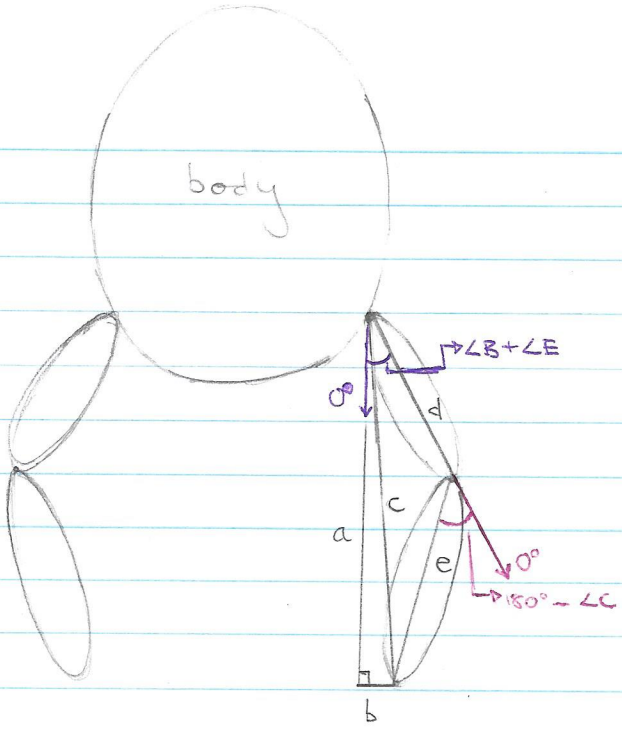

Values:

- b, d, e are known constants
- a changes with the rising & falling of the frog's body
  - update a according to the kinematics distance formula:
    $d = v_i t + \frac{1}{2}at^2$, where $d = a$, I preset the frog's initial velocity (v_i) & the acceleration, & time is updated using a separate function
- c can be calculated knowing that $\triangle abc$ is a right triangle (given the values of a & b): $c = \sqrt{a^2+b^2}$
- $\angle C$ & $\angle E$ calculated using law of cosines:
  - $\angle C = \cos^{-1}\left(\frac{c^2 - d^2 - e^2}{(-2de)}\right)$
  - $\angle C = \cos^{-1}\left(\frac{e^2 - c^2 - d^2}{(-2cd)}\right)$

Setting Rotation Values

- set the rotation value for the hip joint to $(\angle B + \angle E)(-1)$. The (-1) is because the angles increase in the clockwise direction
- set the rotation value for the knee joint to $180° - \angle C$ because the rotation value & $\angle C$ are supplementary, as you can see in the diagram