SCIENCE TWO 2024/2025 **HOMEWORK #8**

NAME:

Review Classwork #8.

QUESTION: Using expressions for gravitational (Slide #3) and electric (Slide #5) forces, calculate and compare the gravitational force of attraction and the electrostatic(electric) force of repulsion between two electrons in an atom.

Step 1: Write the expressions for the forces here:

Step 2: Now use the following values in your calculations:

mass=MASS=mass of an electron=$9.1093837 \times 10^{-31}$ kg

charge=CHARGE=charge of an electron=1.602×10^{-19} C (coulomb)

distance=approximate size of an atom=10^{-10} m

Math hint (exponent handling rules): $10^{-a}=1/10^{a}$, $10^{a} \bullet 10^{b}=10^{(a+b)}$, $10^{a}/10^{b}=10^{(a-b)}$

After careful cancelling of all other units, you should obtain the values for the forces in N (Newtons). Show your work!!! And don't forget to compare!