SCIENCE TWO(online) 2025/2026 **HOMEWORK #2**

NAME:

Review Classwork #2.

QUESTION: Using expressions for gravitational (Slide #5) and electric (Slide #7) 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:

GRAVITY =

ELECTRIC FORCE =

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

mass=MASS=mass of an electron=$9.1093837 \times 10^{-31}$ kg (both masses are the same)
charge=CHARGE=charge of an electron=1.602×10^{-19} C (coulomb) (both charges are the same)
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!

GRAVITY =

ELECTRIC FORCE =

COMPARISON: