M/J Grade 8 Pre-Algebra

Homework 10

1. A galaxy is 5×10^9 light years away from Earth. A telescope can view objects up to 1×10^{10} light years away. Is the galaxy within the viewing range of the telescope?

2. A human cell has a diameter of about 2×10^{-5} meters. A virus has a diameter of 5×10^{-7} meters. How many times smaller is the virus compared to the human cell in terms of diameter?

3. An electron has a charge of -1.6×10^{-19} coulombs. A research experiment requires a total charge of -2.4×10^{-18} coulombs. How many electrons are needed for the experiment?

4. A chemical reaction produces 8.4×10^{21} molecules of water. If one mole of water contains 6.022×10^{23} molecules, how many moles of water are produced in the reaction?