



Name:

The mass of different subatomic particles is given in the following chart:

Particle	Mass (in kg)
Proton	0.0000000000000000000000001673 kg
Electron	0.000000000000000000000000000000000009109 kg
Neutron	0.0000000000000000000000001675 kg

1. Expr	ess the	mass of	each	particle in	n scientific	notion.
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List the differen	t subatomic	particles in	order from	greatest to lea	st, in terms of mass.
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What is the charge of each particle

proton?	electron?	neutron?
proton:		

4. The mass of the hydrogen atom is 1.67×10^{-27} kg. Our sun is made up mostly (72%) of hydrogen. The sun's mass is 1.99×10^{30} kg. What mass of the sun is hydrogen? How many hydrogen atoms are there in the sun? Express your answers in scientific notation.

5. All atoms of a particular element always contain the same number of protons and electrons but can have different numbers of neutrons. For example, a hydrogen atom will always have one proton and one electron, but atoms of hydrogen can have either zero, one or two neutrons. Neon atom will always have 10 protons and 10 electrons, but atoms of neon can have 10, 11, or 12 neutrons. These different varieties of atoms of an element are called **isotopes**. A scientist determines that the mass of a particular gold atom is 3.334×10^{-25} kg. How many neutrons does the gold atom have?



