

NAME _____

DATE _____

PERIOD _____

Mole Unit WS #1: The Mole



The mole is simply a number equal to 602,000,000,000,000,000,000,000 or 6.02×10^{23} written in scientific notation. If you had a mole of pennies, you would have enough money to pay all the expenses of the United States for the next billion years. A mole of the larger marshmallows would cover the United States to a depth of more than 600 miles.

Why would you need to use a number this big? The mass of atoms is so small that you need many of them to have mass significant enough for people to weigh.

Questions

1. A mole is a certain number of items. What do each of the following terms represent?

dozen _____

million _____

pair _____

billion _____

mole _____

gross _____

2. Use a Periodic Chart to find the mass, in grams, of each of the following:

1 mole of aluminum = g1 mole of Iron = g1 mole of magnesium = g1 mole of lead = g1 mole of helium = g1 mole of Cobalt = g

3. Find the mass, in grams, of each of the following:

2 moles of aluminum = g3 moles of Iron = g4 moles of magnesium = g5 moles of lead = g6 moles of helium = g7 moles of Cobalt = g

4. How many moles are in each of the following?

156 grams of chromium = moles84 grams of Carbon = moles156 grams of potassium = moles40 grams of Calcium = moles476 grams of uranium = moles40 grams of Neon = moles