Task:

For the reaction
$Zn + 2HCl \rightarrow ZnCl_2 + H_2$,
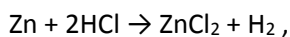what is the maximum amount of $ZnCl_2$ which could be formed from 10.58 g of Zn and 10.9 g of HCl?

Solution:
From the periodic table of elements:
MW(Zn) = 65.39 g/mol
MW($ZnCl_2$) = 136.4 g/mol

The number of moles of Zn is
n(Zn) = m(Zn) / MW(Zn) = 10.58 / 65.39 = 0.1618 mol
The number of moles of HCl is
n(HCl) = m(HCl) / MW(HCl) = 10.9 / 36.5 = 0.299 mol
According to the chemical equation the number of moles of Zn is half the number of moles of HCl.
n(Zn) = n(HCl) / 2 = 0.299 / 2 = 0.150 mol (we have 0.1618 mol of Zn).
That means that HCl is the limiting reactant.

The number of moles of $ZnCl_2$ in this reaction is
n($ZnCl_2$) = n(HCl) / 2 = 0.299 / 2 = 0.150 mol
The mass of $ZnCl_2$ is
m($ZnCl_2$) = n($ZnCl_2$) · MW($ZnCl_2$) = 0.150 · 136.4 = 20.46 g

Answer: m($ZnCl_2$) = 20.46 g