

HOMEWORK #1

Problem 1 (50 points)

Click on the link below and read the article:

<https://www.ev-volumes.com/#:~:text=Global%20EV%20sales%20reached%206,4%2C%20%25%20in%202020.>

- (20 points) Monthly plug-in vehicle sales & Year on Year Growth, for 2021, what month has the highest percentage growth from 2021. **April 2021 (247%)**
- (30 points) Global BEV & PHEV Sales:
 - How many units of BEV&PEV were sold in 2021? **6.75 million units**
 - How much is the percentage increase as compared to 2020 sales? **108%**

Problem 2 (30 points)

Click on the link below and read the article:

<https://spectrum.ieee.org/what-v2g-tells-us-about-evs-and-the-grid-2657785771>

- For utilities looking for ways to store power for later use, all those shiny new EVs might look like rolling batteries:
 - EV battery can only be charged (draw power) from the grid (T/**FALSE**)
 - In a power system grid, when the power demand exceeds the supply, the EV battery can be used to make up the difference by discharging its stored energy into the grid. (**TRUE**/F)
 - In the early 1990s Elon Musk produced a two-seater sports car called the Tesla, which featured bidirectional charging capability (T/**FALSE**).

Problem 3 (20 points)

Click on the link below and read the article:

<https://www.energy.gov/eere/vehicles/articles/fotw-1251-august-15-2022-electric-vehicles-have-lowest-annual-fuel-cost-all>

- Estimates of annual fuel costs for model year (MY) 2022 light-duty vehicles show that electric vehicles (EVs) can save consumers thousands of dollars over gasoline or diesel vehicles. (**TRUE**/F)
- Annual Fuel Cost for Model Year 2022 Light-Duty Vehicles of Battery Electric Vehicle (BEV) is less than \$1000.- (**TRUE**/F)