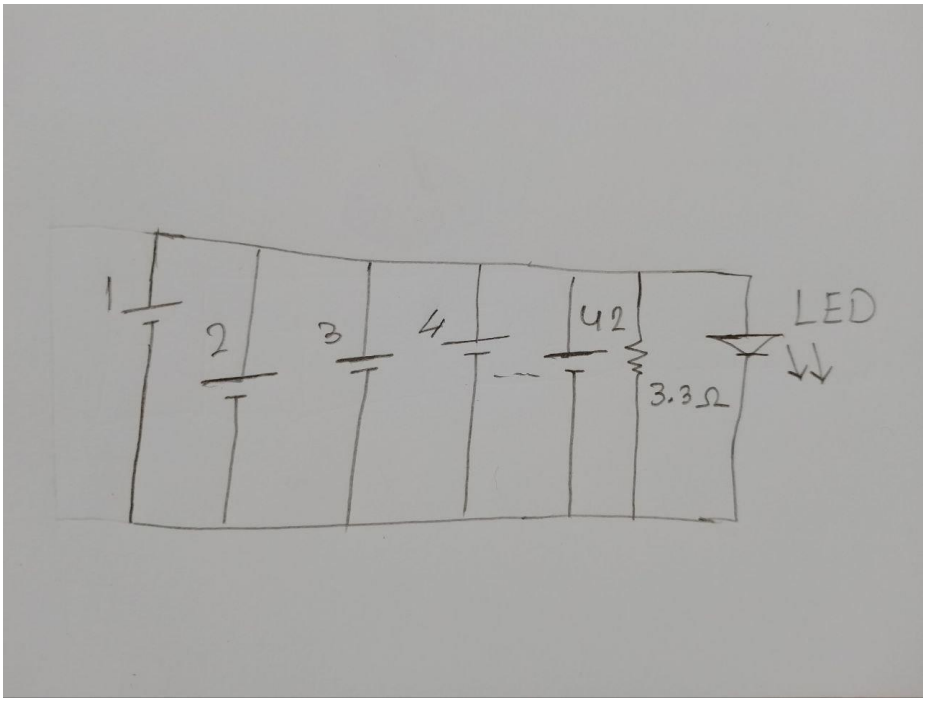

V=12v R=3.3ohm

P=V^2/R = 12^2/3.3= 43.64W

Girls stay inside the box of shame for 5 hours; we need to determine the Energy consumption.

E=P*T = 43.63W * 5h = 218.2 Wh

The battery has capacity = 5.2 Ah

Number of batteries are needed in parallel = E / Battery capacity = 218.2Wh / 5.2 Ah= 41.92 = 42 battery

Bonus:

Battery management system (BMS) is technology dedicated to the oversight of a battery pack, which is an assembly of battery cells, electrically organized in a row x column matrix configuration to enable delivery of targeted range of voltage and current for a duration of time against expected load scenarios.

The BMS typically includes:

- Temperature monitoring and protection.
- Cell voltage monitoring and balancing circuitry.
- Communication interface for monitoring and control.
- Overcharge and over discharge protection.