Ethernet LANs

Exercise 1: How many possible OUI's are there? How many devices can be manufactured for each OUI?

for OUI $3 \text{ bytes} \times 8 \text{ bits} = 24 \text{ bits}$

$2^{24} = 2^{20} \cdot 2^4 \simeq (1000)^2 \cdot 16 \approx 16 \text{ million.}$

for a device : 16 million.

Exercise 2: Classify each of a hub, learning bridge and switch according to the following: can operate in full-duplex mode, can have independent PHY rates, collisions can happen, can receive from multiple ports simultaneously.

	FDX	different PHY rates	collisions	multiple simultaneous RX
hub	N	N	Y	N
bridge	Y	Y	N	Y
switch	Y	Y	N	Y