Ethernet LANs

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

3 bytes = 24 bits

2^{24} possible OUIs

but bit # is for broadcast

2^{23} possible non-broadcast OUIs $\approx$ 8 million

$2^{24} \approx 16 \times 10^6$ devices per OUI

$2^{48} \approx 8 \times 10^{12}$

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.

	full duplex?	indepnt PHY rates?	collisions?	simultaneous receive?
hub	N	N	Y	N
learning bridge	Y	Y	N	Y
switch	Y	Y	N	Y