

*Figure 1*

You have been given the network of Figure 1. The description of the network is the following:

- PC 1 and PC 2 are equipped with a 10Gbps network adapter. PC 3 is equipped with a 2.5Gbps network adapter, and PC 4 is equipped with a 1Gbps network adapter.
- The 4 PCs are connected via CAT6 ethernet to an L2 switch, which supports 10Gbps per port.
- The L2 switch is connected to a wireless access point (WAP), via a CAT5e ethernet cable.
- The WAP supports a 2.5Gbps wired connection and up to 4 wireless connections of 1Gbps each.
- Laptop 1 is equipped with a 1Gbps wireless network adapter and is connected to the WAP.

Answer the following questions:

- 1) What is the bandwidth between PC 2 and Laptop 1? Why?
- 2) What is the bandwidth between PC 3 and Laptop 1? Why?
- 3) What is the bandwidth between PC 4 and Laptop 1? Why?
- 4) How could you improve the bandwidth of question 3 above?

A second laptop is added to the network with a 1Gbps wireless network adapter, as shown in Figure 2 below.

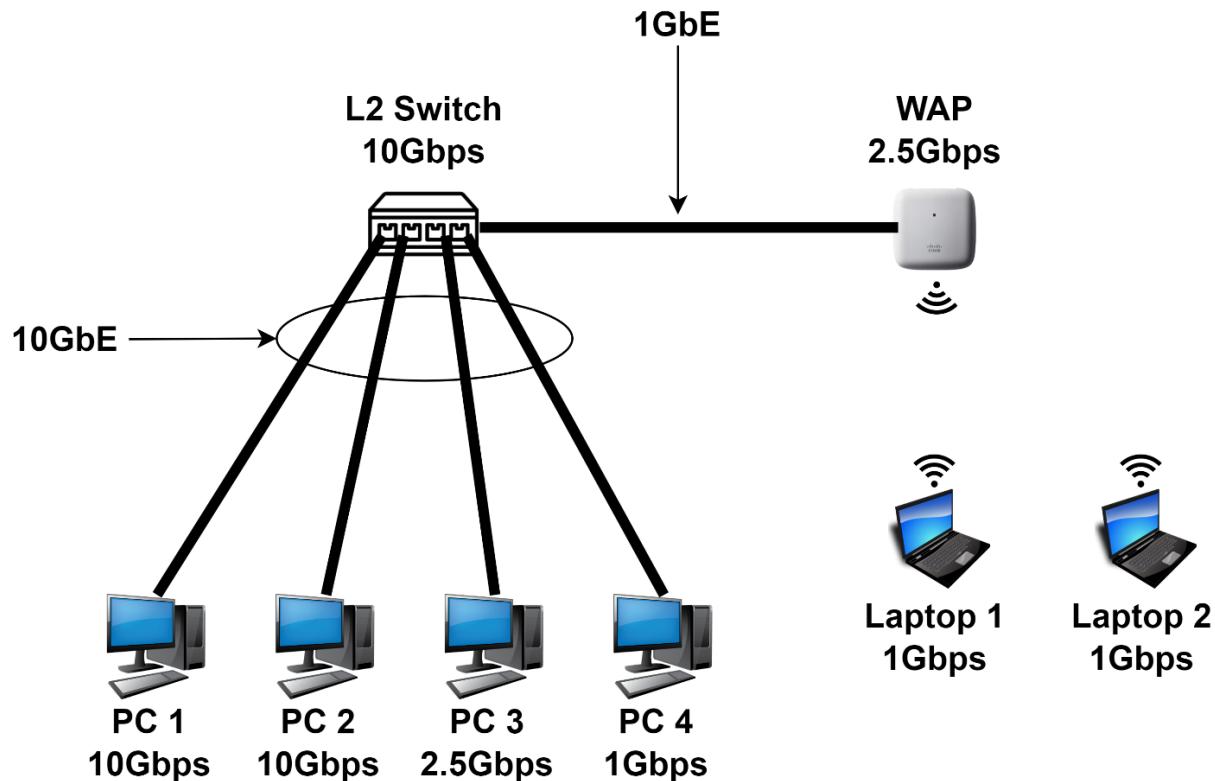


Figure 2

Answer the following questions:

- 5) If PC 3 communicates with both laptops simultaneously, what will the bandwidth of the connection be?
- 6) How could you improve the bandwidth of question 5 above?
- 7) If PC 1 communicates with both laptops simultaneously, what will the bandwidth of the connection be?
- 8) How could you improve the bandwidth of question 7 above?