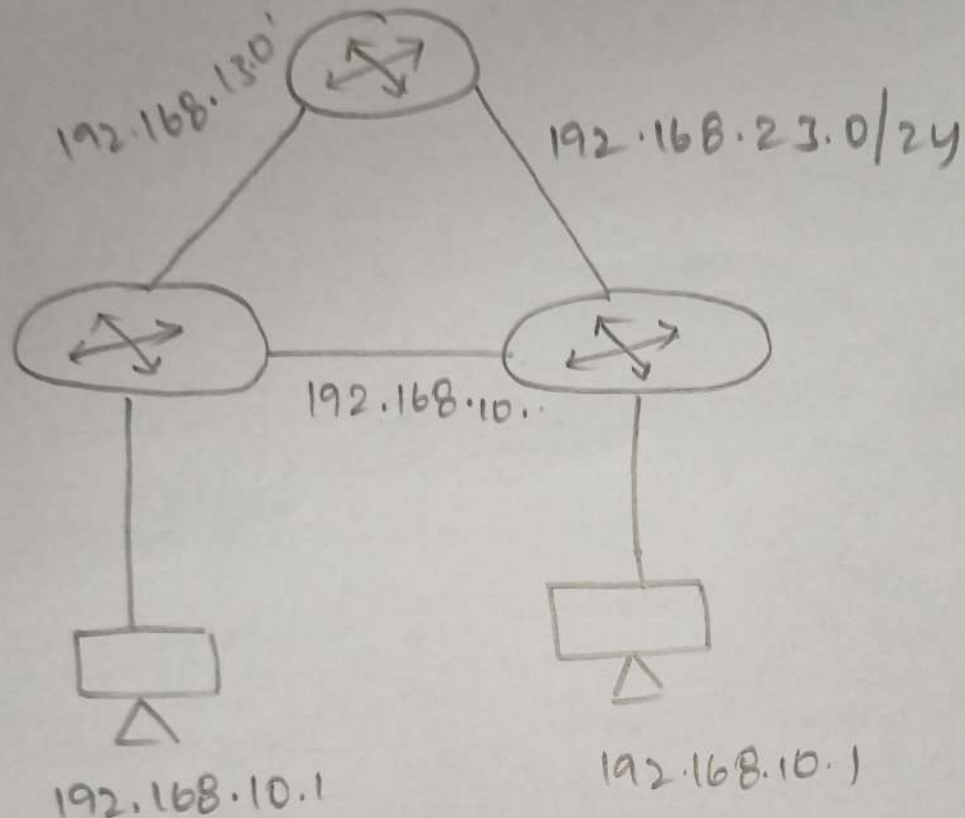

192.168.13.0
192.168.23.0/24
192.168.10..
192.168.10.1
192.168.10.1

30) Calculate band width saved in multicast over unicast?

Sol:-

- 20 robots receive the same command stream
- Each stream = 1mbps
- using multicast with PIM
- Goal = optimize

unicast scenario:

Each robot recive seperate copy of the stream

Total unicast Bandwidth = 1Mbps × 20 = 20Mbps

Multicast Scenaria;

only 1 stream send, and it is replicated in the network only when the network duplicates it only where needed

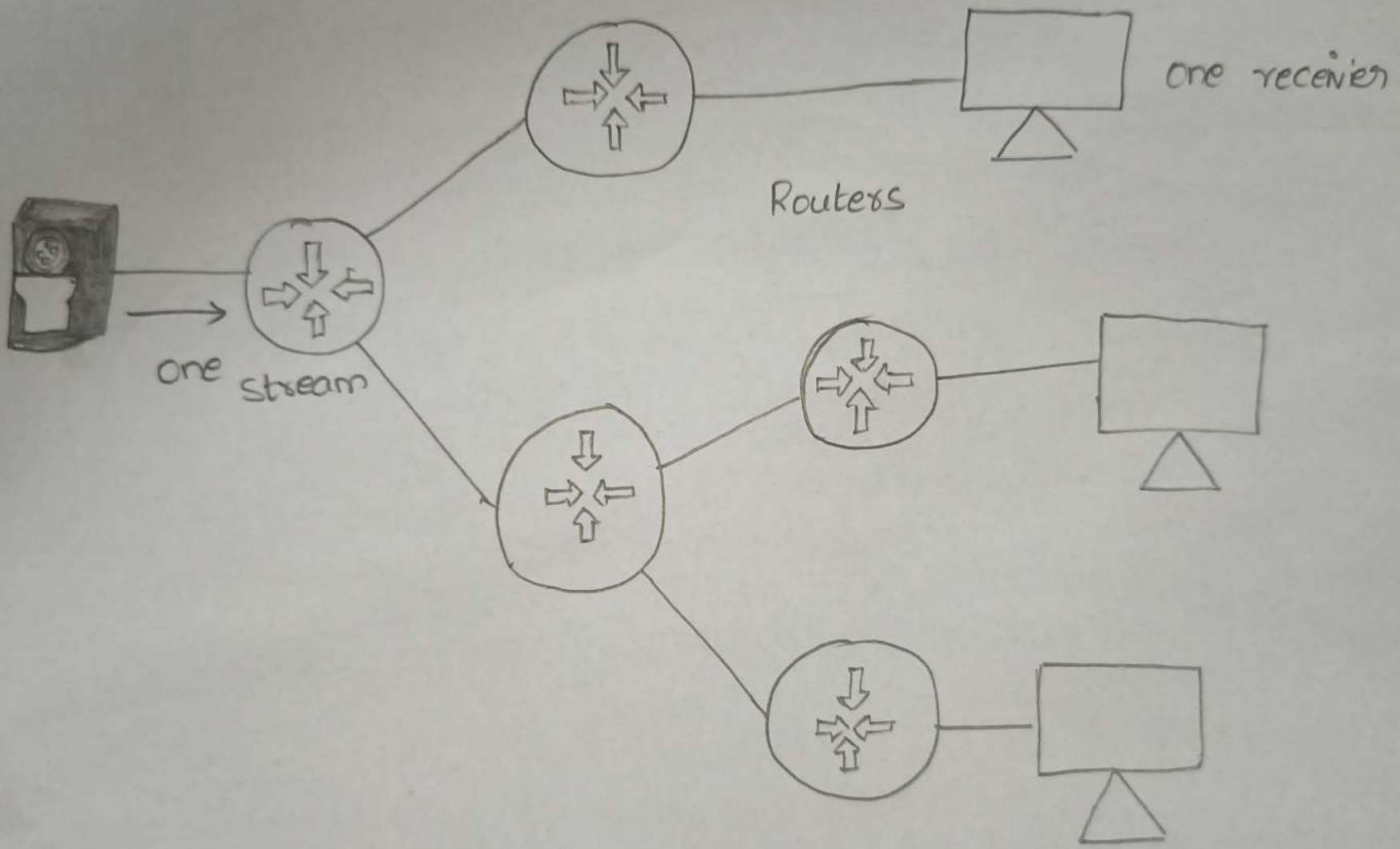
Total multicast band width used as source = 2Mbps

Band width saved:

Band width saved = 40Mbps - 2Mbps

= 38 Mbps

Unicast (one-to-one)



20) what If unicast was used Instead? compare.

A. Given!

- 1 Stream = 1mbps
- 20 robots need the same Stream
- Multy cast with pim

1. Band width:

- multicast - 1mbps
- unicast - 20 mbps

2. Network Load:

- multy cast - Replication done ate branching points
- unicast - 20 Separation follow

3. Scalability:

- Multicast - Easy - Same 1 mbps Send
- unicast - consume massive band width

4. Efficiency:

Band width	very Efficient
cpu/Memory	low
Idea for Same-data-to-many	yes

Computer Networks

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Q) If one stream is 1mbps and 20 robots receive it via media multicast, how much total bandwidth is consumed?

A.

In multi cast Scenario like this:

- one Stream = 1Mbps
- 2 robots receive it via media

The total band width consumed on the source-to-network Path is only 1 mbps, not 20 Mbps because. multycast Sends to one copy

Explanation:

- In unicast you'd send you 20 seperate 1 mbps Streams. using 20 Mbps
- But with Multicast + PIM, the Stream is send once and replagate efficiantly.
- This Result in major band width savings and efficiently use of network resources
- The network, across the panel replicated only where needed.
- The branching points to reach all 20 robotes

IP MULTICASTING