IS8055556: Data and Computer Communications	**Recitation 9**
Semester 2 5786	**16 June 2026**
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IP Fragmentation, Classful Routing

1 IP Packet Fragmentation

Suppose a TCP message that contains 2048 bytes of data, 20 bytes of IP header, and 20 bytes of TCP header is passed to IP for delivery across two networks of the Internet (i.e., from the source host to a router to the destination host). The first network uses 14-byte headers and has an MTU of 1024 bytes; the second uses 8-byte headers with an MTU of 512 bytes. Each network's MTU gives the size of the largest IP datagram that can be carried in a link-layer frame **including the link layer header** (*e.g.* network 1's packets can hold a total of 1024 bytes of payload data). Give the sizes, offsets, more flag values, and internal formats of the sequence of fragments delivered to the network layer at the destination host.

Use the following table format for your answer.

Packet #	More Flag?	Offset	Format + Size
			?? Link Header + ?? IP Header + ?? TCP Header + ?? data
			?? Link Header + ?? IP Header + ?? data

...

2 Classful Routing

A router has the IP address 10.25.35.45. It receives IP packets with the following IP addresses. What will it do with the packets?

(a) 10.54.30.100

(b) 11.68.75.100

(c) 9.25.4.35

(d) 130.56.88.88

(e) 200.200.100.5

3 Classful Routing

A router has the IP address 155.15.20.70. It receives IP packets with the following IP addresses. What will it do with the packets?

(a) 10.2.89.100

(b) 127.0.0.1

(c) 0.0.0.0

(d) 155.16.21.70

(e) 155.15.21.89

(f) 248.26.15.30

