

3

Two neighboring nodes (A and B) use a sliding-window protocol with a 3-bit sequence number. As the ARQ mechanism, Go-back-N is used with a window size of 5. Assuming that A is transmitting and B is receiving. Show the window positions for the following succession of events (Q#3-Q#5):

Before A sends any frames *
(-/2 Points)

- 1 2 3 4 5
- 1 2 3 4 5 6 7
- 1 2 4 6
- 3 4 5 6 7
- 4 5 6 7

4

After A sends frames 0,1,2,3 and receives acknowledgment from B for 0, 1, and 2 *
(-/2 Points)

- 2 3 4 5 6
- 4 5 6 7 0

3 4 5 6 7

4

After A sends frames 0,1,2,3 and receives acknowledgment from B for 0, 1, and 2 *
(-/2 Points)

- 2 3 4 5 6
- 4 5 6 7 0
- 3 4 5 6 7
- 2 4 5 6 7
- 4 5 6 7



5

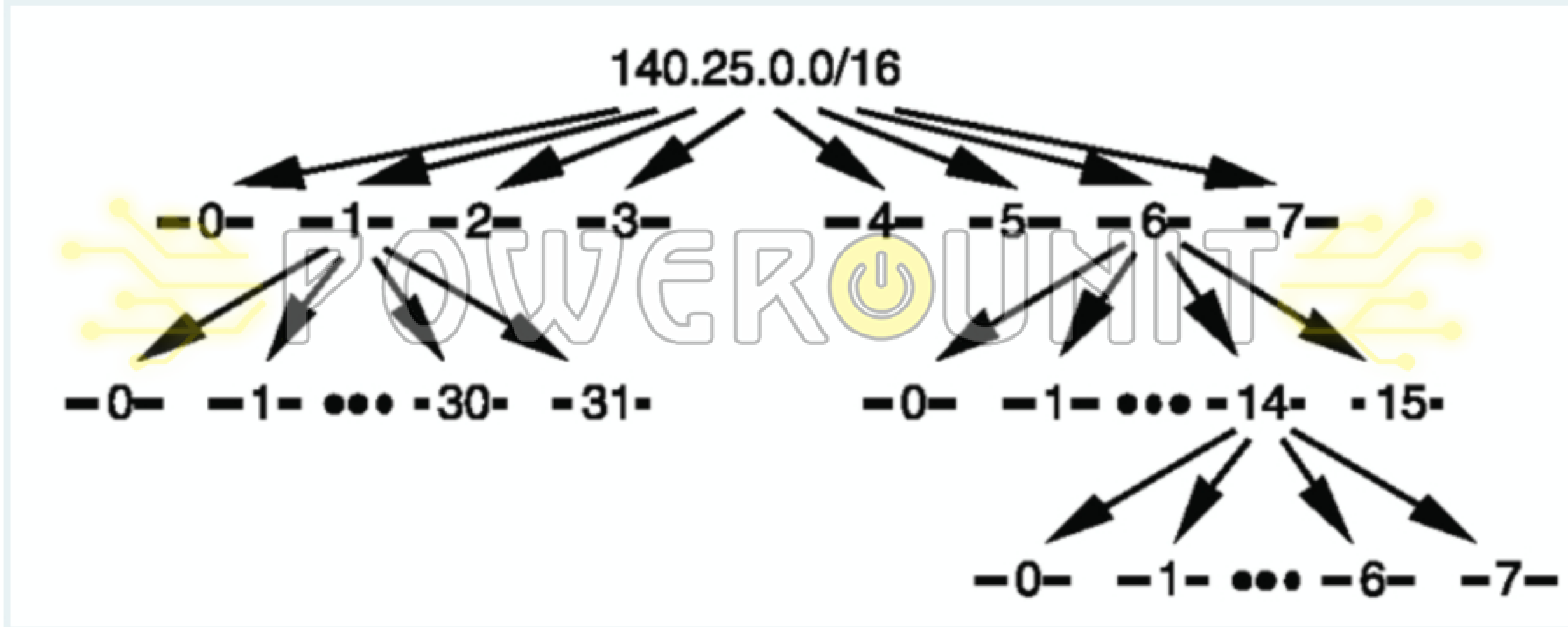
After A sends frames 4, 5, and 6 and B acknowledges 5 and the ACK is received by A. *
(-/2 Points)

- 7 0 1
- 7 0 1 2
- 7 0
- 7 0 1 2 3
- 6 7 0 1 2

6

An organization has been assigned the network number 140.25.0.0/16 and it plans to deploy VLSM. The following figure provides a graphic display of the VLSM design for the organization. Answer questions 6 and 7 accordingly?

Which one of the following subnets belongs to Subnet #6-14 (140.25.220.0/23)? *
(-/2 Points)



- 140.25.224.0/19
- 140.25.96.0/19
- 140.25.192.0/23
- 140.25.221.128/26
- None of the mentioned

7

Which one of the following host addresses can be assigned to Subnet #6-14-2? *
(-/2 Points)

- 140.25.96.1/19
- 140.25.127.254/19
- 140.25.198.1/23
- 140.25.199.254/23
- 140.25.220.131/26



8

Study the following figure and answer the questions below (Q#8-11)

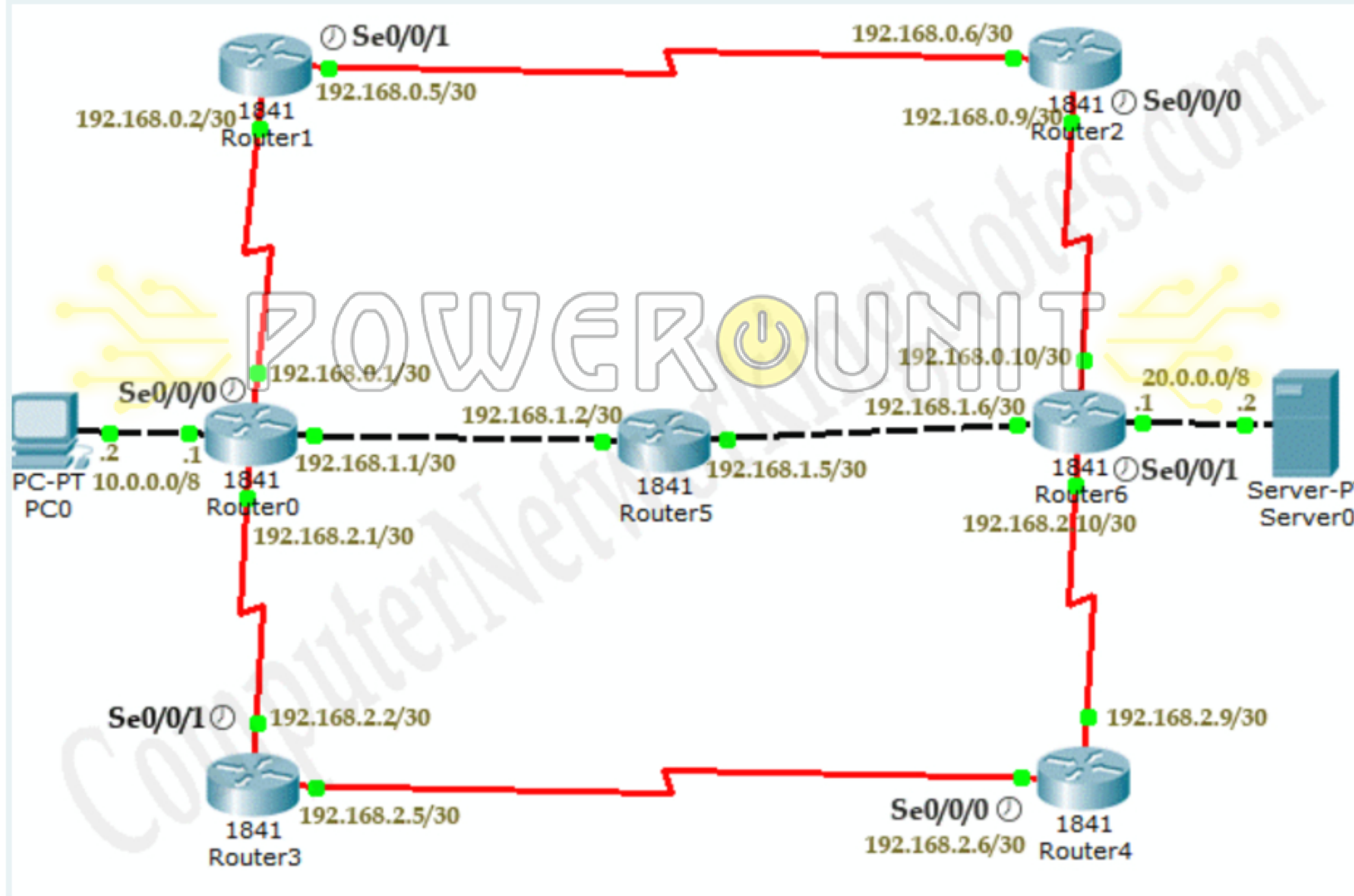
What is the default bandwidth of serial DCE ends? *
(-/2 Points)



8

Study the following figure and answer the questions below (Q#8-11)

What is the default bandwidth of serial DCE ends? *
(-/2 Points)



1.544Mbps

128Mbps

- 1.544Mbps
- 128Mbps
- 256Mbps
- 2Mbps
- 64erial DCE

9

Assume PC0 wants to communicate with Server0 whereas all routers employ OSPF routing protocol. What is the cost of route Router0-Router1-Router2-Router6-Network (Server0) bearing in mind that the serial lines between aforementioned routers have a bandwidth of 64Kbps? *
(-/2 Points)

- 3
- 4687
- 193
- 2
- 2000

10

What is the best route for routing table set by OSPF for those ends (PC0 and Server0)? *
(-/2 Points)

- route R0-R1-R2-R6
- route R0 - R5 - R6
- route R0 - R3 - R4 - R6
- 2000
- Insufficient information
- None of the mentioned

11

Assume PC0 wants to communicate with Server0 whereas all routers employ OSPF routing protocol. What is the cost of route Router0-Router3-Router4-Router6-Network (Server0) bearing in mind that the serial lines between aforementioned routers have a bandwidth of 1.544Mbps? *
(-/2 Points)

- 3
- 4687
- 193

11

Assume PC0 wants to communicate with Server0 whereas all routers employ OSPF routing protocol. What is the cost of route Router0-Router3-Router4-Router6-Network (Server0) bearing in mind that the serial lines between aforementioned routers have a bandwidth of 1.544Mbps? *

- 3
- 4687
- 193
- 2000

12

Find the values of X1, X2, and X3 (in ms) available in this figure, respectively? *

```
RouterC
IP-EIGRP neighbors for process 44
H Address Interface Hold Uptime SRTT RTO Q Seq
(sec) (ms) Cnt Num
0 192.168.0.1 Se0 11 00:03:09 800 X1 0 6
```


12

Find the values of X1, X2, and X3 (in ms) available in this figure, respectively? *
(-/2 Points)

RouterC								
IP-EIGRP neighbors for process 44								
H	Address	Interface	Hold (sec)	Uptime (ms)	SRTT	RTO	Q Cnt	Seq Num
0	192.168.0.1	Se0	11	00:03:09	800	X1	0	6
1	192.168.1.2	Et0	12	00:34:46	100	X2	0	4
1	192.168.2.3	Se1	13	00:34:46	20	X3	0	8

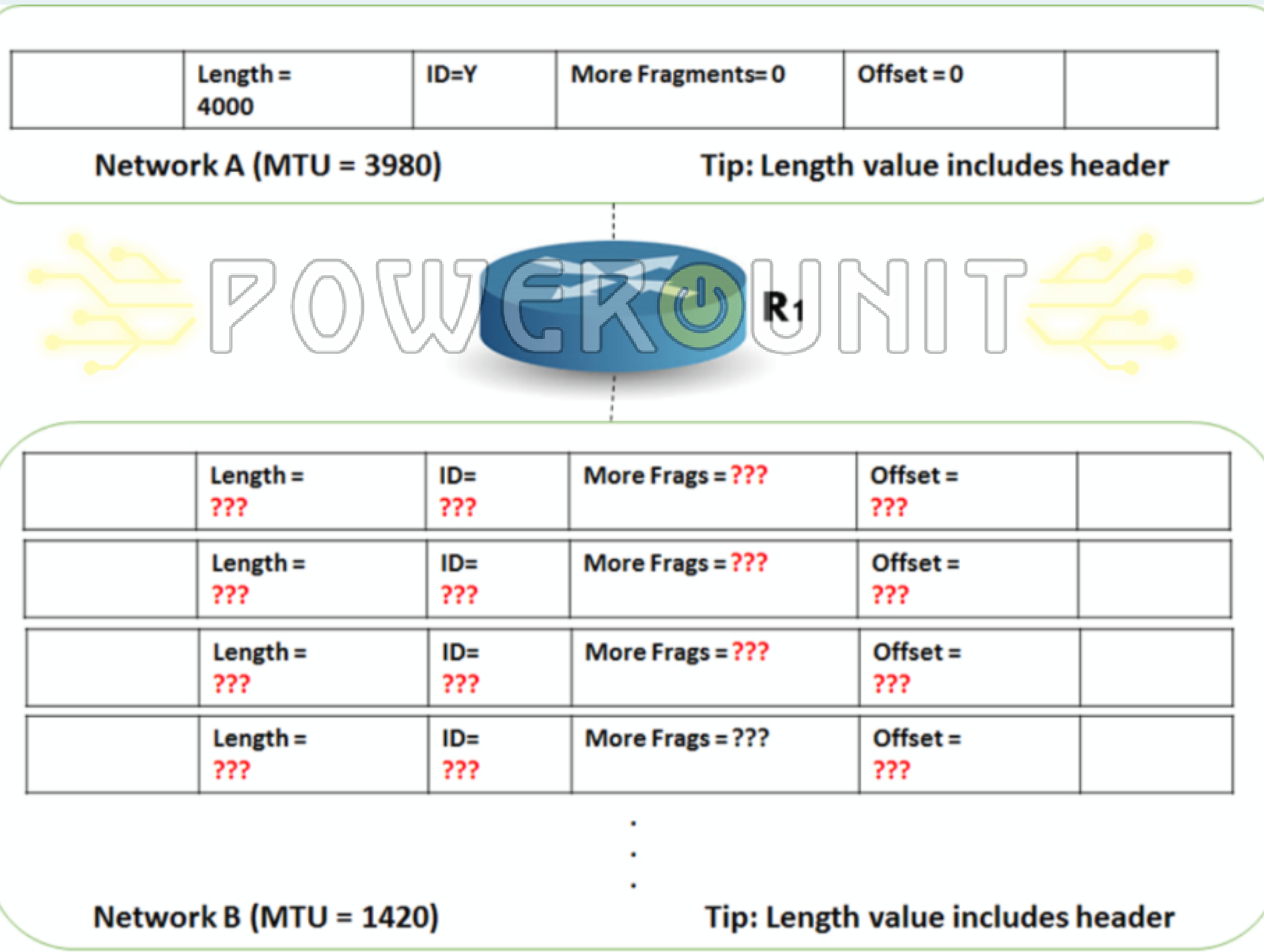
- 4800, 600, 200
- 4800, 600, 120
- 5000, 600, 200
- 5000, 5000, 5000
- None of the values mentioned

13

Consider the figure below where a packet ID Y, which is sent from network A, is received by router R1 to be forwarded to a host that exists in network B. What are the values of length, ID,

13

Consider the figure below where a packet ID Y, which is sent from network A, is received by router R1 to be forwarded to a host that exists in network B. What are the values of length, ID, More Frags, and offset, respectively that belong to the second fragment? *
(-/2 Points)



Network B (MTU = 1420)

Tip: Length value includes header

- 1420, Y, 1, 175
- 1400, Y, 1, 175
- 1440, Y, 1, 175
- 1420, X, 1, 172
- None of the values mentioned

14

What is the purpose of Split Horizon? *
(-/2 Points)

- It prevents the regular update messages from reinstating a route that has gone down
- Information received on an interface cannot be sent back out the same interface
- Informs all neighbor routers that two routes exist
- Tells the router the destination is unreachable
- Tells the router there is a link breakage

15

15

In EIGRP best path is known as the successor, where as backup path is known as : *

(-/1 Points)

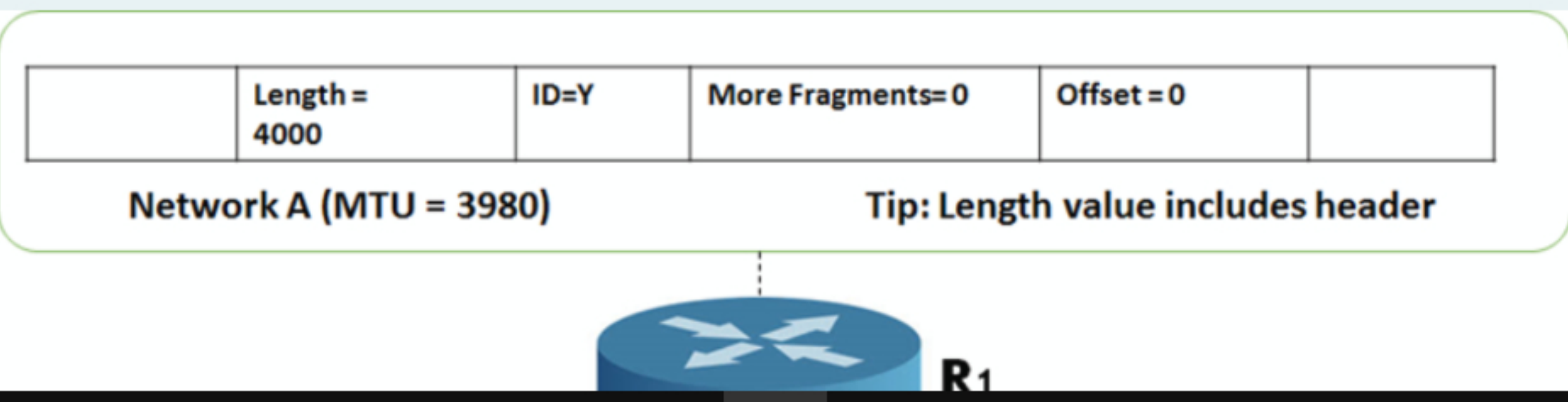
- Feasible successor
- Hello route
- Default route
- There is no backup route in EIGRP
- None of the mentioned



16

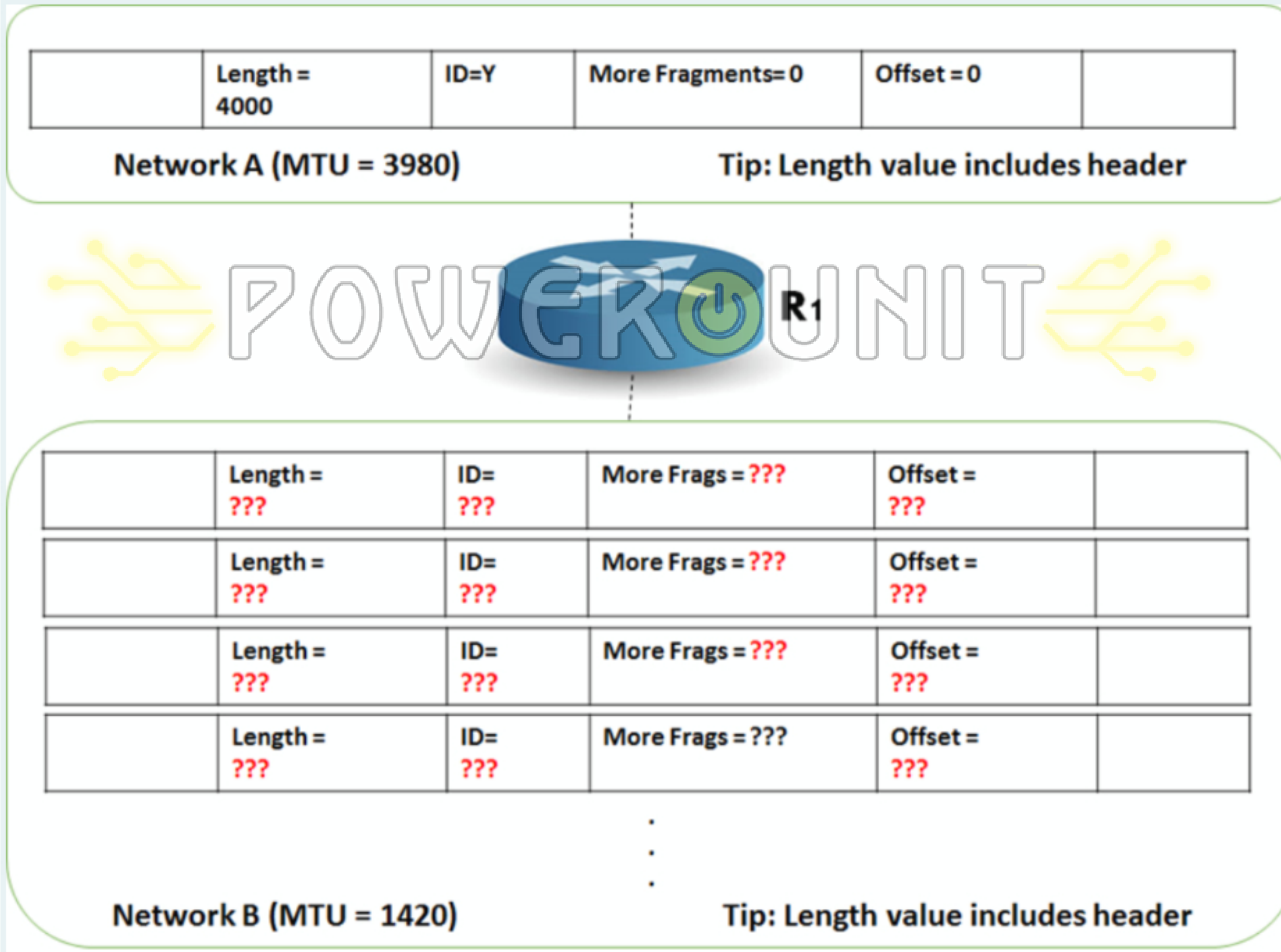
Consider the figure below where a packet ID Y, which is sent from network A, is received by router R1 to be forwarded to a host that exists in network B. What are the values of length, ID, More Frags, and offset, respectively that belong to the last fragment? *

(-/2 Points)



16

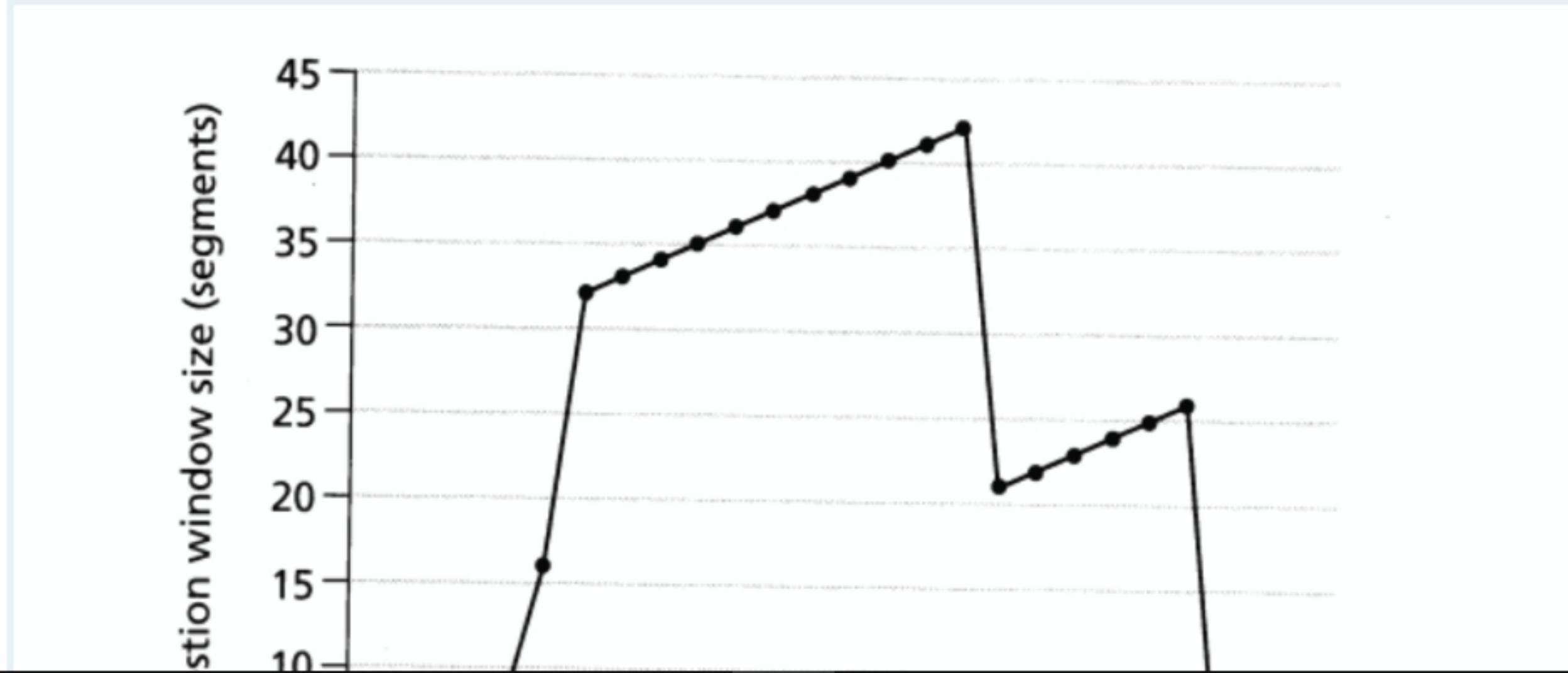
Consider the figure below where a packet ID Y, which is sent from network A, is received by router R1 to be forwarded to a host that exists in network B. What are the values of length, ID, More Frags, and offset, respectively that belong to the last fragment? *
(-/2 Points)



- 1180, Y, 1, 350
- 1420, Y, 1, 350
- 1180, Y, 1, 175
- 1180, X, 1, 350
- None of the values mentioned

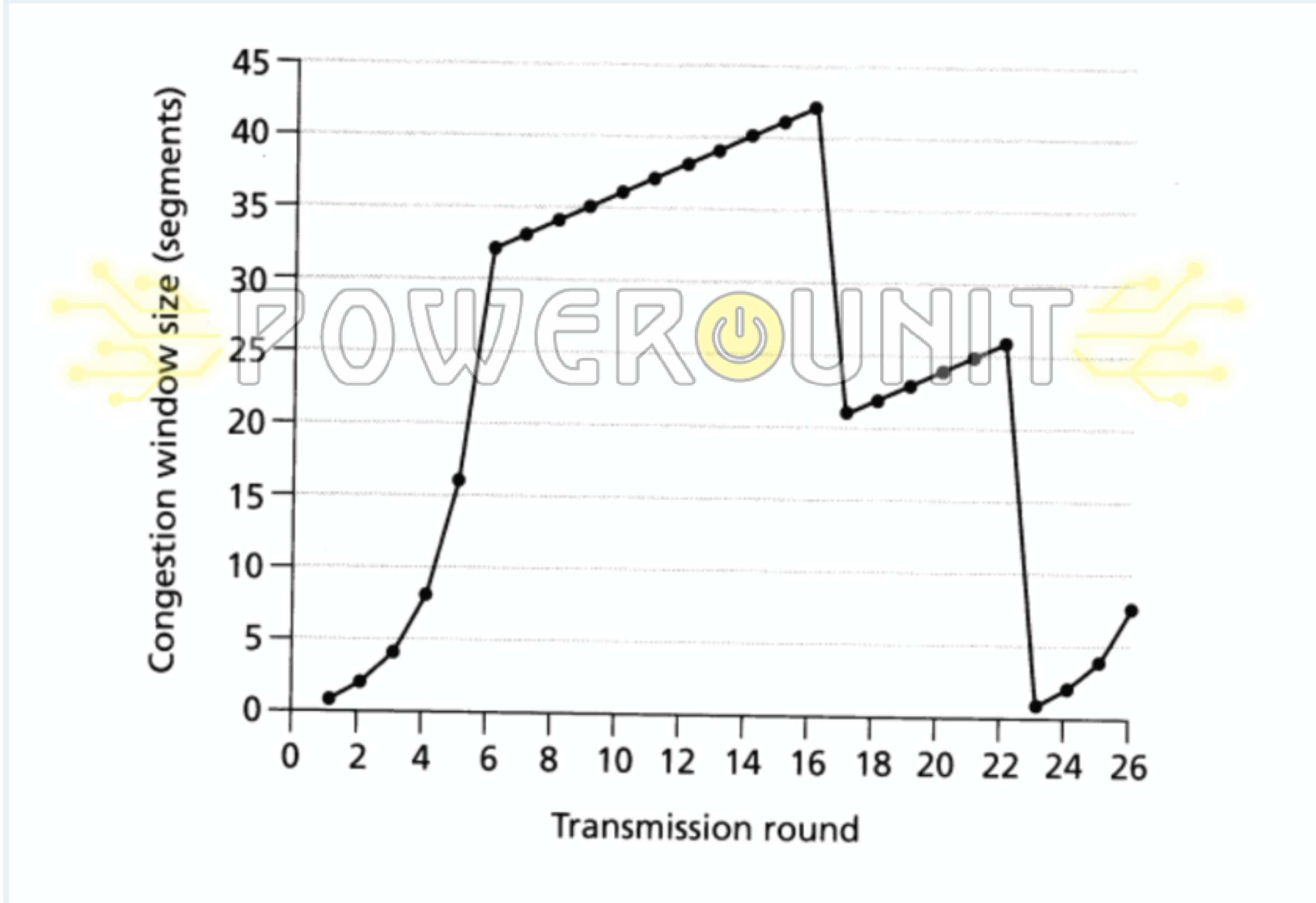
17

The picture below shows the behavior of a TCP Reno. After the 16th transmission round, is segment loss detected by triple duplicate ACKs or by a timeout event? * (-/2 Points)



17

The picture below shows the behavior of a TCP Reno. After the 16th transmission round, is segment loss detected by triple duplicate ACKs or by a timeout event? *
(-/2 Points)



Triple duplicate ACKs

- Triple duplicate ACKs
- Timeout event
- Two duplicate ACKs
- None of the mentioned
- Four duplicate ACKs

18

EIGRP send the hello message after every _____ seconds *
(-/2 Points)

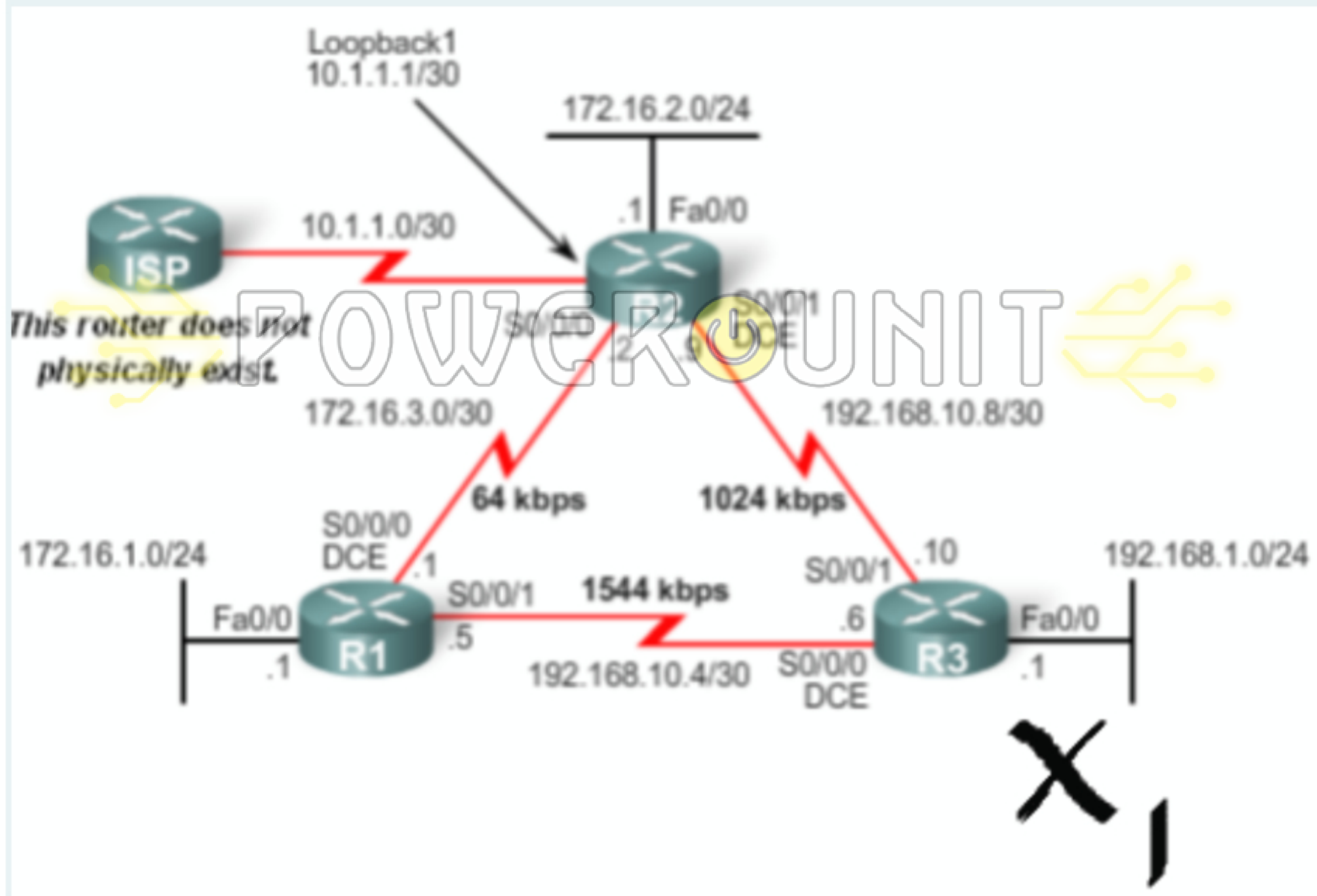
- 5 seconds (LAN), 60 seconds (WAN)
- 5 seconds (LAN), 5 seconds (WAN)
- 15s
- 180s
- 360s

19

In the following figure, R2 want to find a route to network X1 with ID 192.168.1.0/24. Using the

19

In the following figure, R2 want to find a route to network X1 with ID 192.168.1.0/24. Using the EIGRP, which of the following belongs to a valid entry in R2 routing table: *
(-/2 Points)

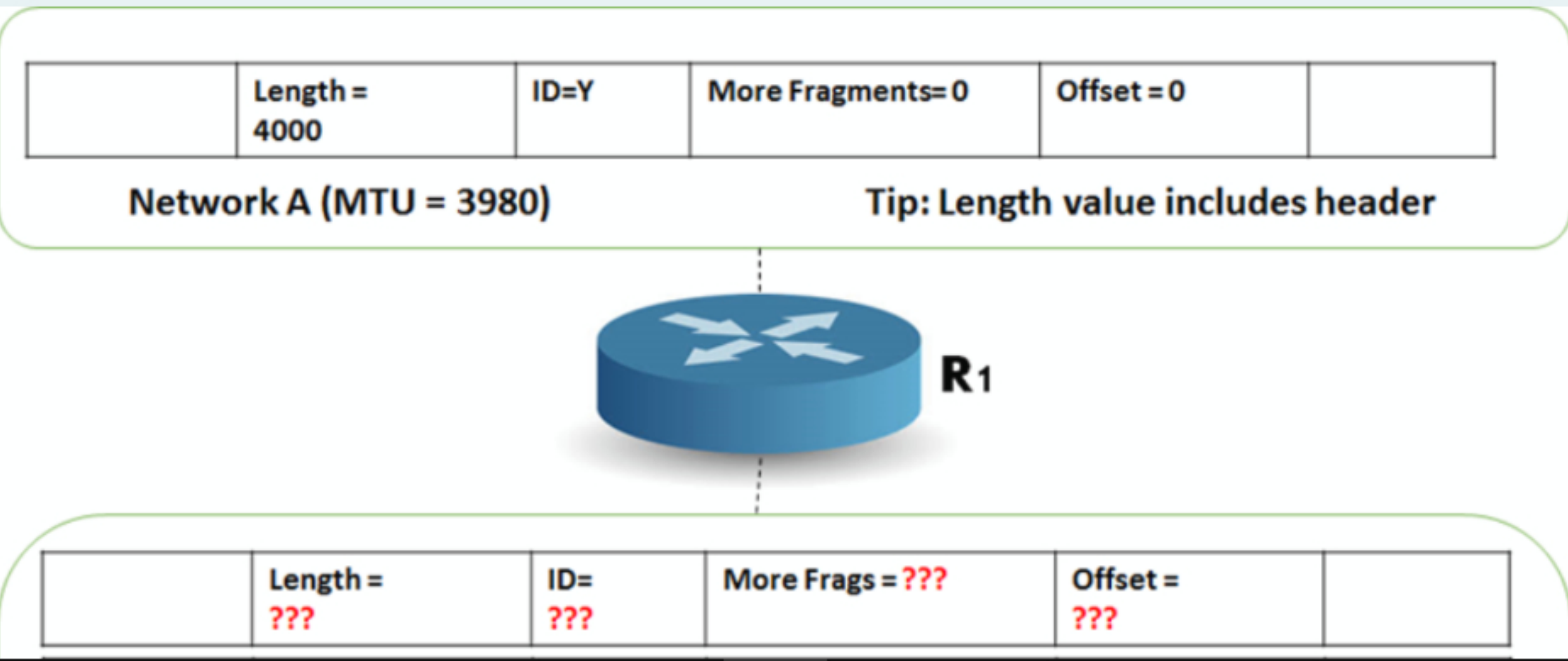


192.168.1.0/24 [90/3014400] via 192.168.10.10 S0/0/1

- 192.168.1.0/24 [90/3014400] via 192.168.10.10 S0/0/1
- 192.168.1.0/24 [90/3014400] via 192.168.10.9 S0/0/1
- 192.168.1.0/24 [110/3014400] via 192.168.10.10 S0/0/1
- 192.168.1.0/24 [120/3014400] via 192.168.10.10 S0/0/1
- 192.168.1.0/24 [90/2172416] via 192.168.10.10 S0/0/1

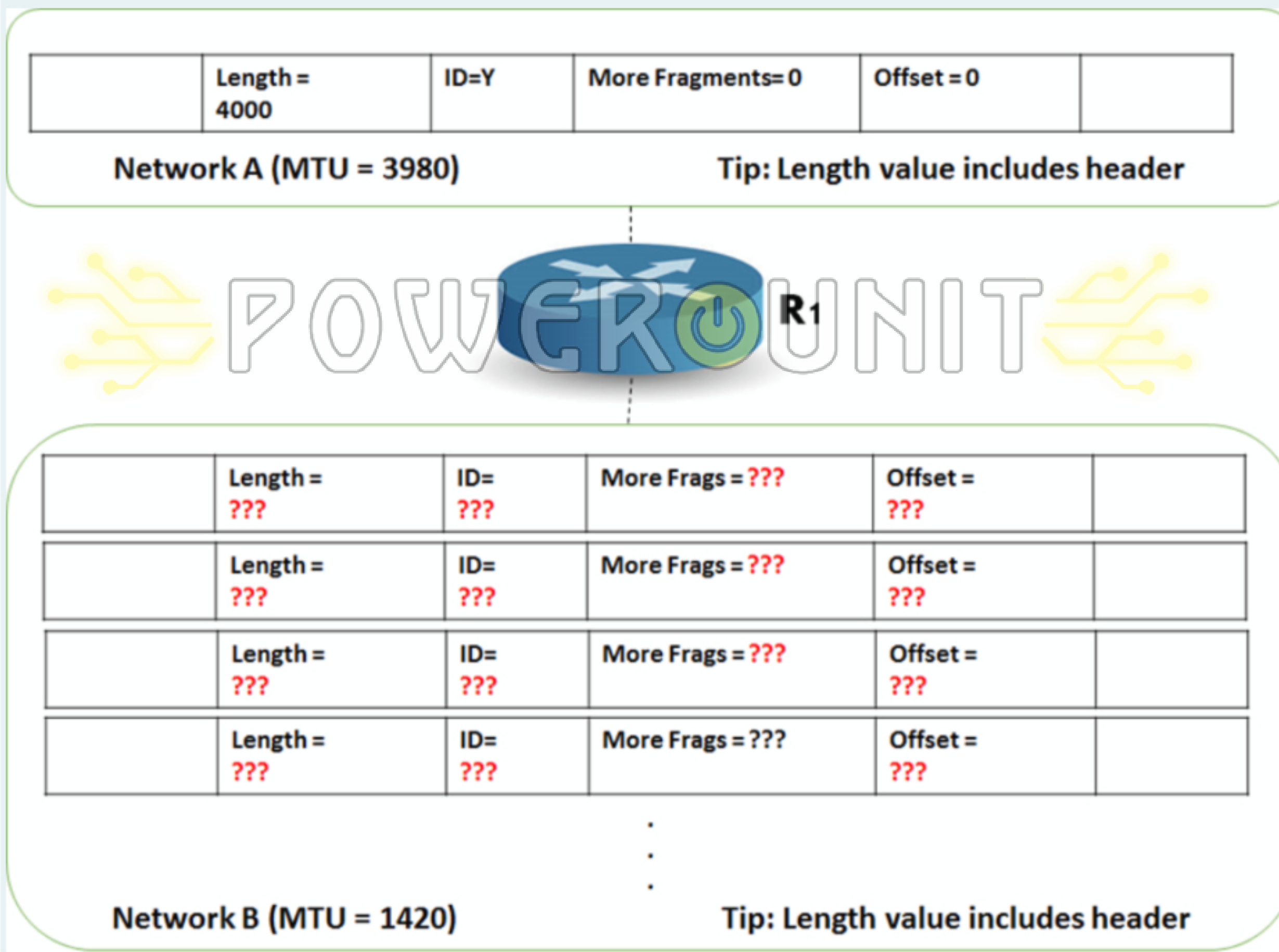
20

Consider the figure below where a packet ID Y, which is sent from network A, is received by router R1 to be forwarded to a host that exists in network B. What are the values of length, ID, More Frags, and offset, respectively that belong to the first fragment? (-/2 Points)



20

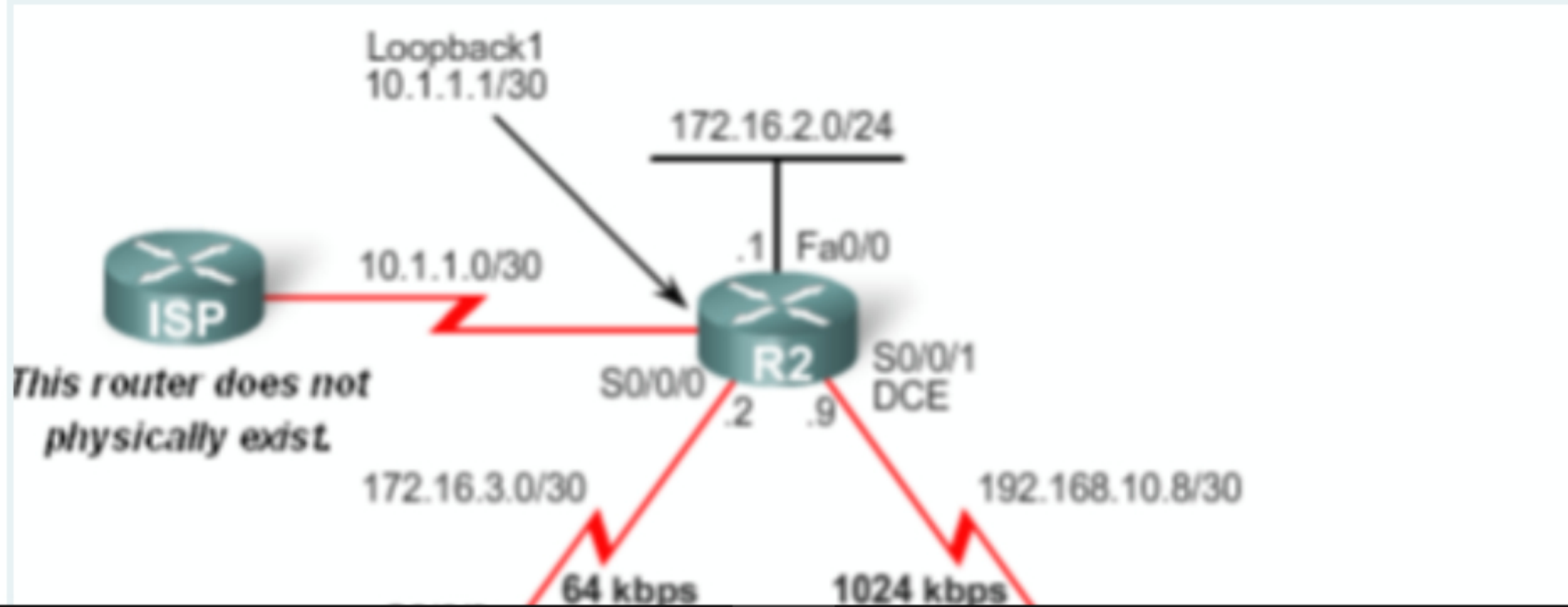
Consider the figure below where a packet ID Y, which is sent from network A, is received by router R1 to be forwarded to a host that exists in network B. What are the values of length, ID, More Frags, and offset, respectively that belong to the first fragment? *
(-/2 Points)



- 1420, Y, 1, 0
- 1400, Y, 1, 0
- 1440, Y, 1, 0
- 1420, X, 1, 0
- None of the values mentioned

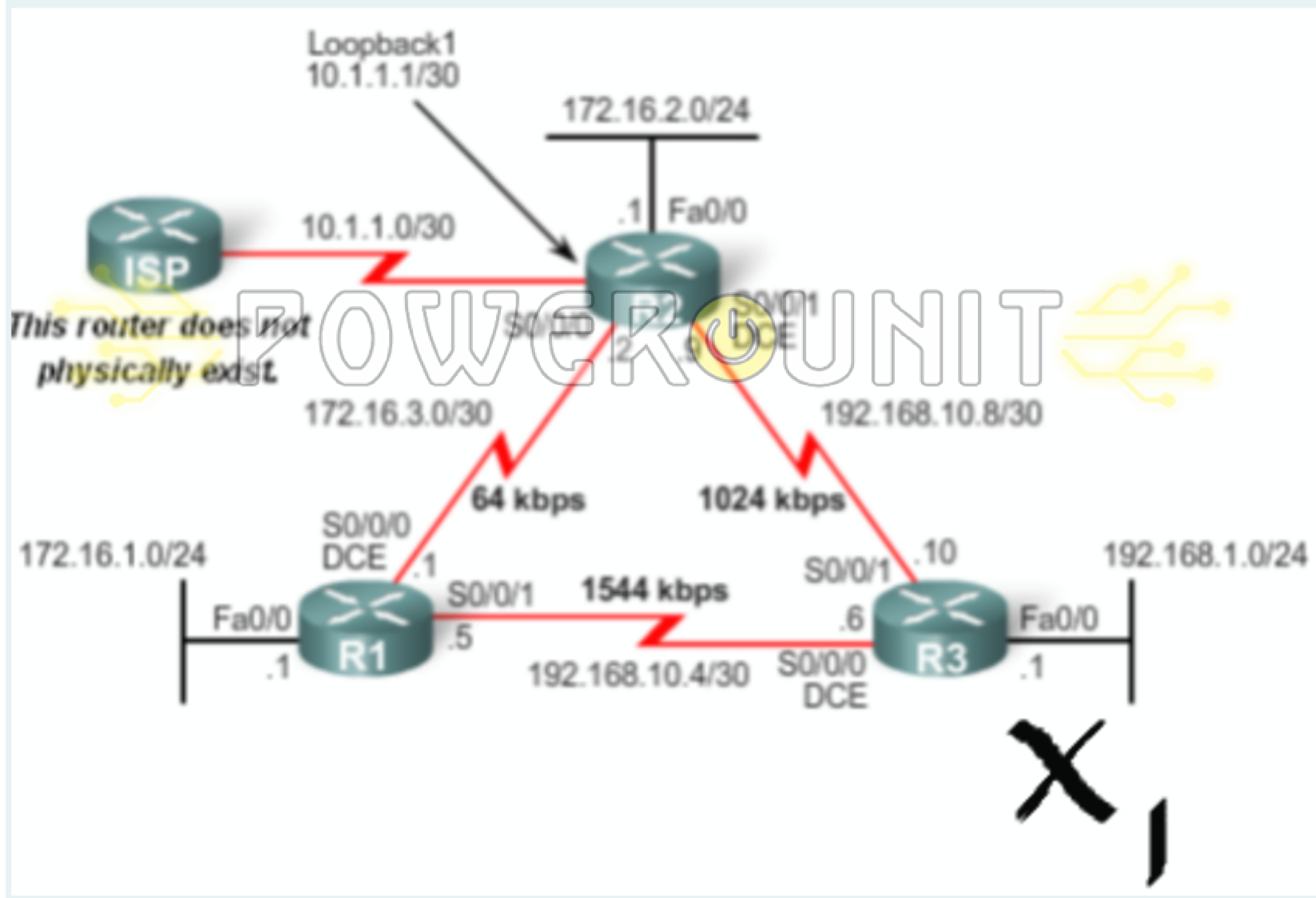
21

In the following figure, R2 want to find a route to network X1 with ID 192.168.1.0/24. Using the RIP-v2, which of the following belongs to a valid entry in R2 routing table: * (-/2 Points)



21

In the following figure, R2 want to find a route to network X1 with ID 192.168.1.0/24. Using the RIP-v2, which of the following belongs to a valid entry in R2 routing table: *
(-/2 Points)

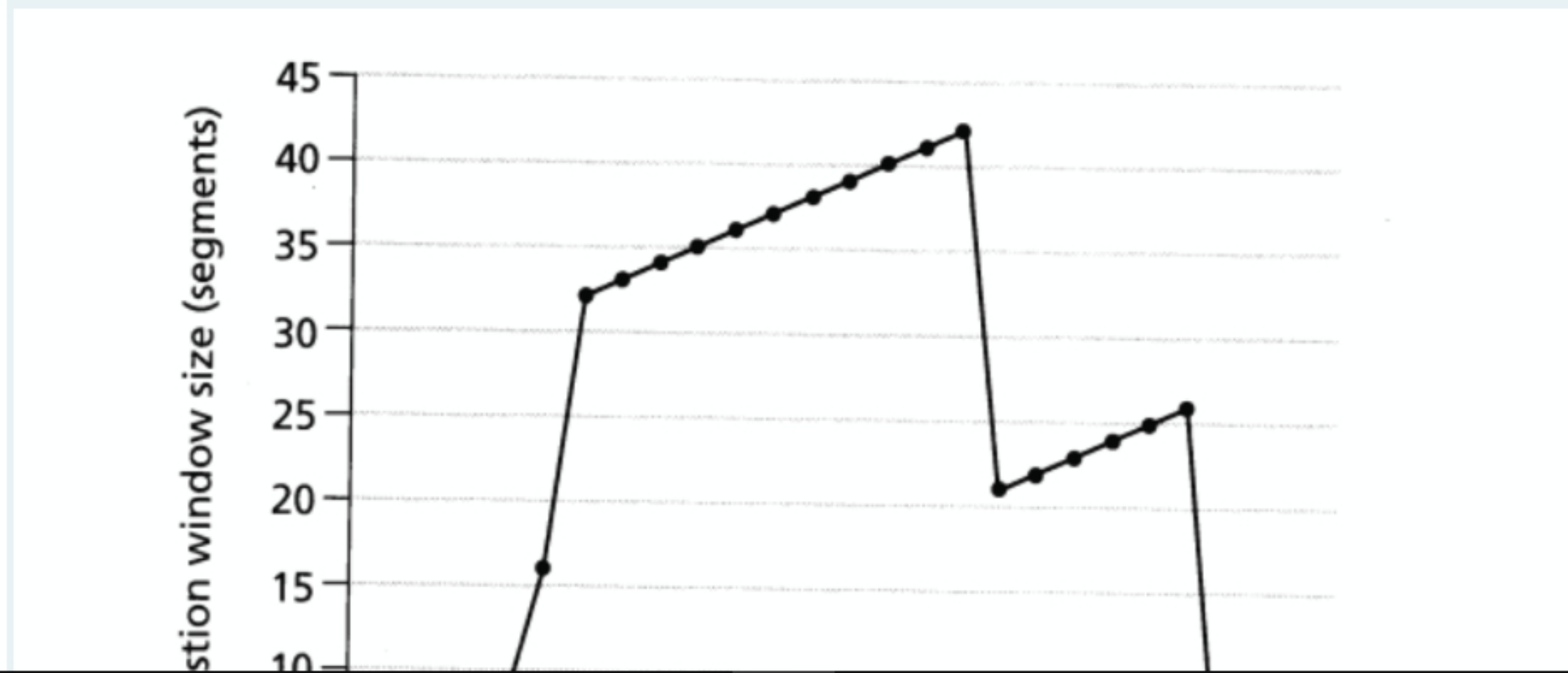


192.168.1.0/24 [90/3014400] via 192.168.10.10 S0/0/1

- 192.168.1.0/24 [90/3014400] via 192.168.10.10 S0/0/1
- 192.168.1.0/24 [110/98] via 192.168.10.9 S0/0/1
- 192.168.1.0/24 [120/2] via 192.168.10.10 S0/0/1
- 192.168.1.0/24 [120/1] via 192.168.10.10 S0/0/1
- 192.168.1.0/24 [90/2172416] via 192.168.10.10 S0/0/1

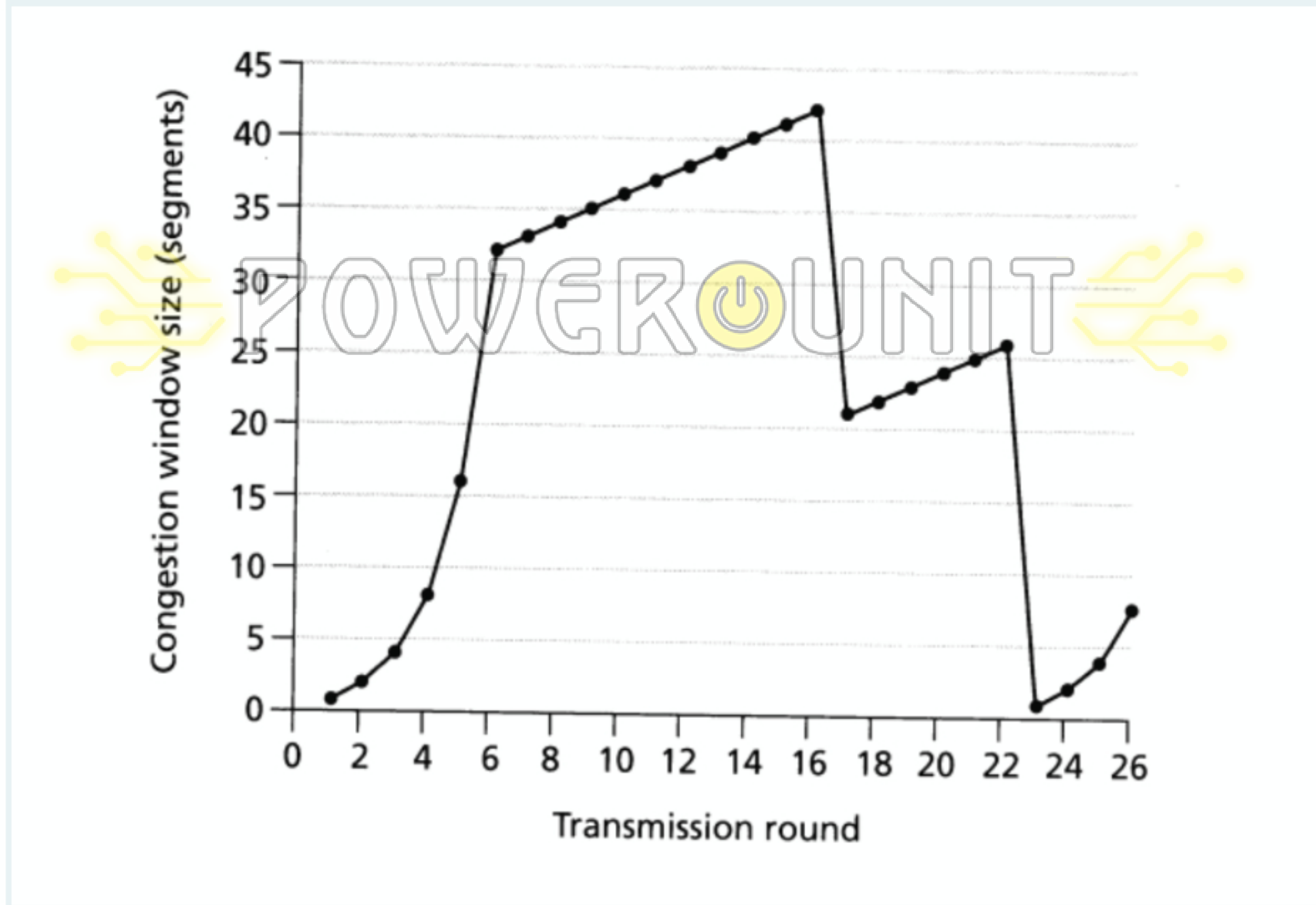
22

The picture below shows the behavior of a TCP Reno. Identify time intervals where TCP slow-start is operating. *
(-/2 Points)



22

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(-/2 Points)

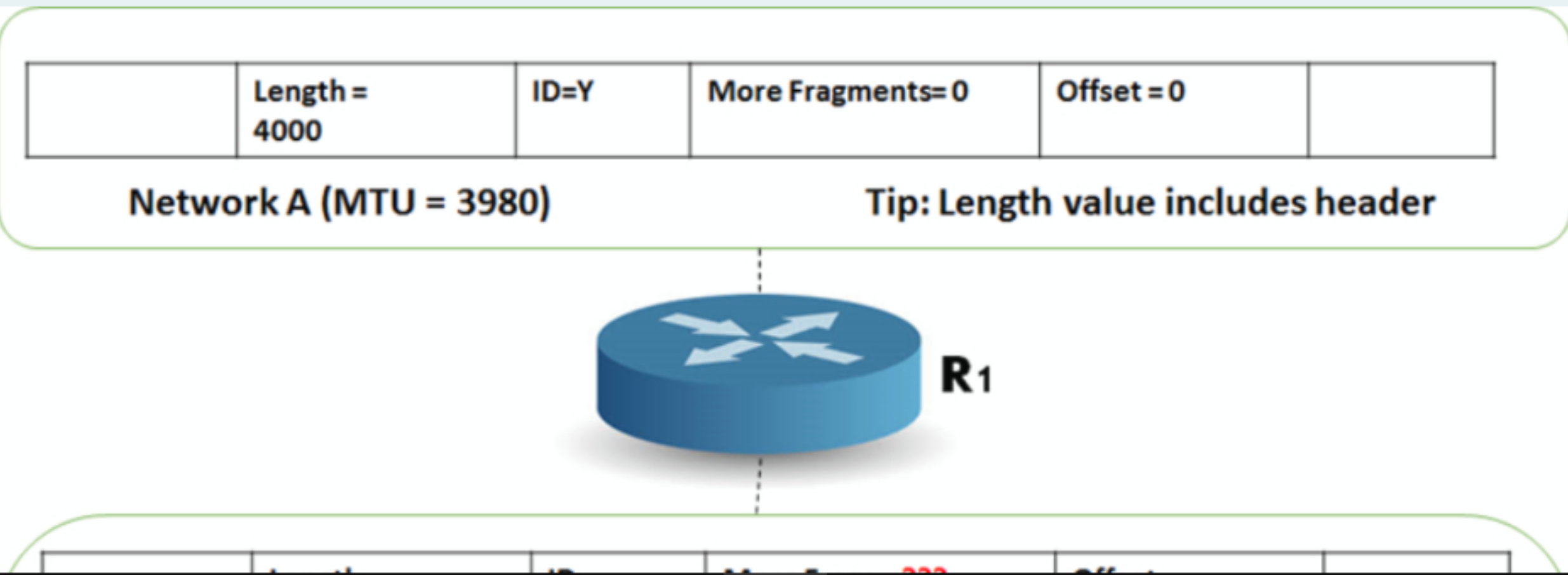


TCP slow-start is operating in the intervals [1,6] and [23,26]

- TCP slow-start is operating in the intervals [1,6] and [23,26]
- TCP slow-start is operating in the intervals [6,16] and [17,22]
- TCP slow-start is operating only in the interval [1,6]
- TCP slow-start is operating only in the interval [6,16]
- None of the mentioned

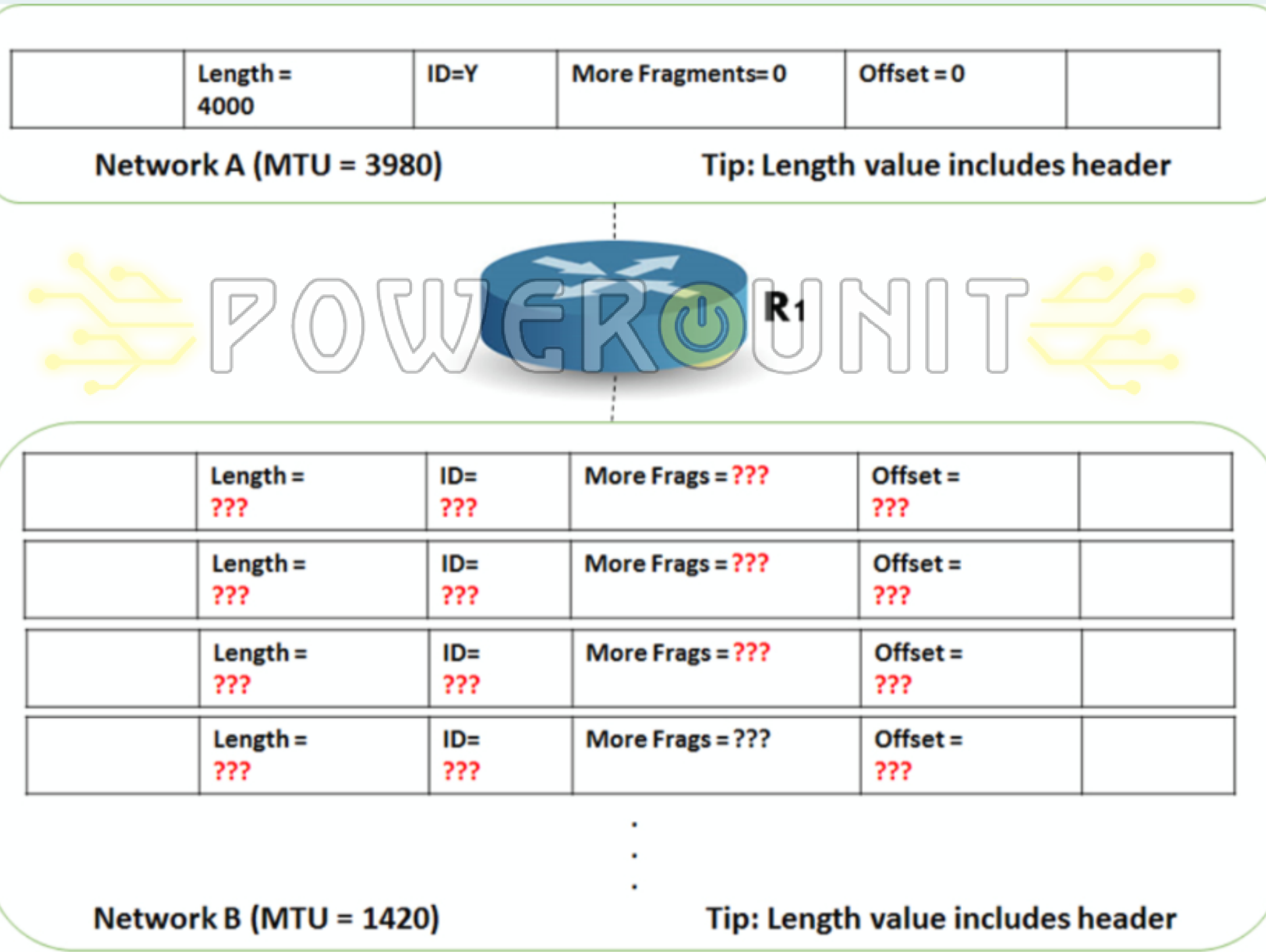
23

Consider the figure below where a packet ID Y, which is sent from network A, is received by router R1 to be forwarded to a host that exists in network B. How many fragments are to be generated? *
(-1 Points)



23

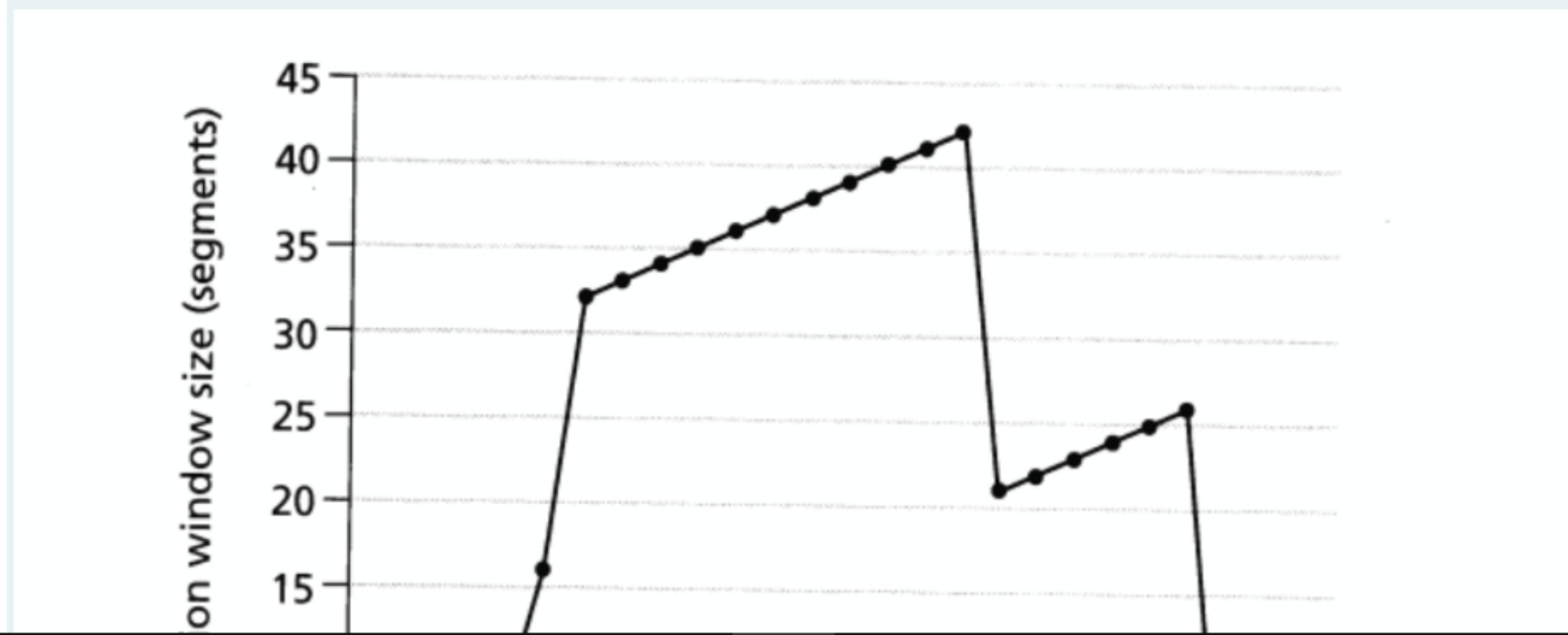
Consider the figure below where a packet ID Y, which is sent from network A, is received by router R1 to be forwarded to a host that exists in network B. How many fragments are to be generated? *
(-/1 Points)



- 2
- 3
- 4
- 5
- 6

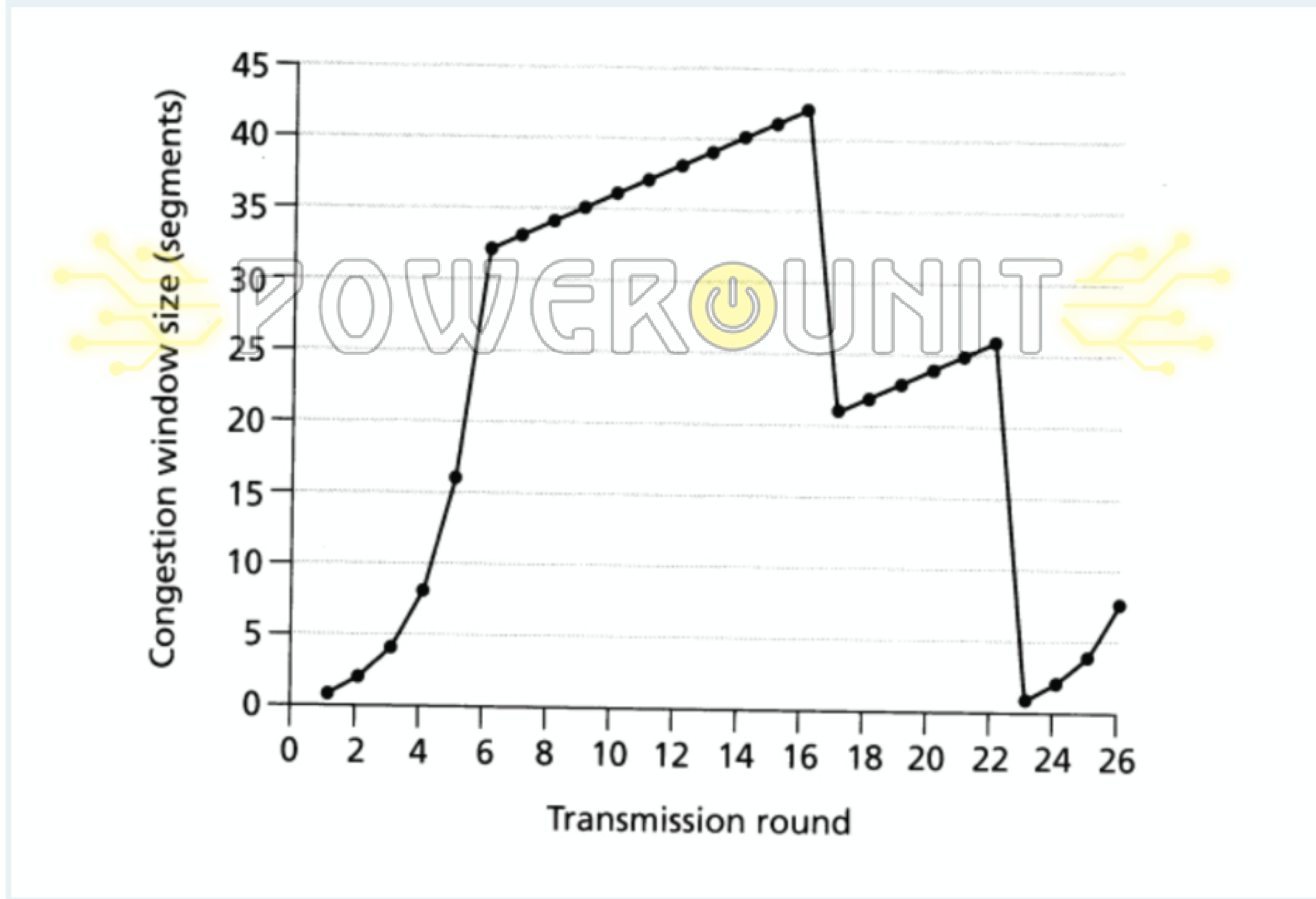
24

The picture below shows the behavior of a TCP Reno. What is the ssthresh value at the first transmission round? *
(-/2 Points)



24

The picture below shows the behavior of a TCP Reno. What is the ssthresh value at the first transmission round? *
(-/2 Points)

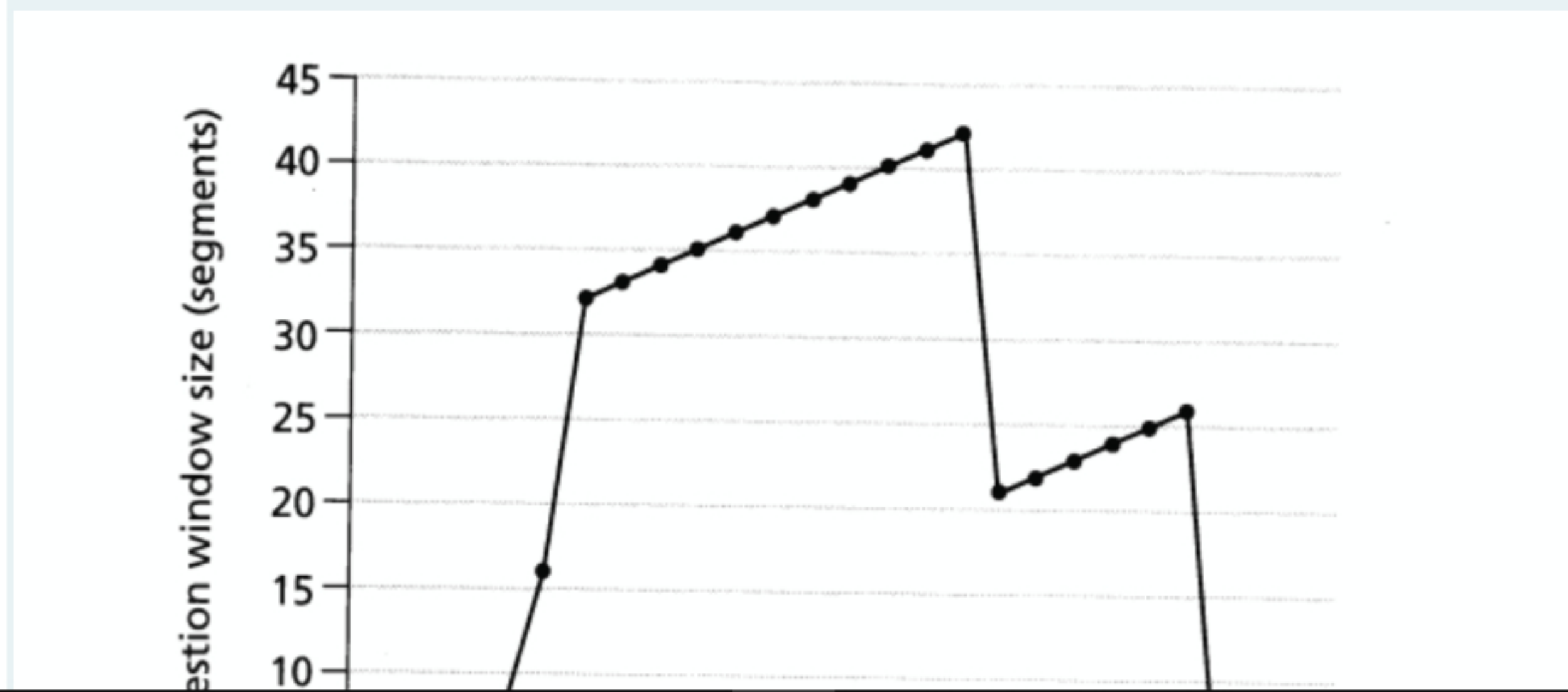


42

- 42
- 32
- 21
- 26
- 13

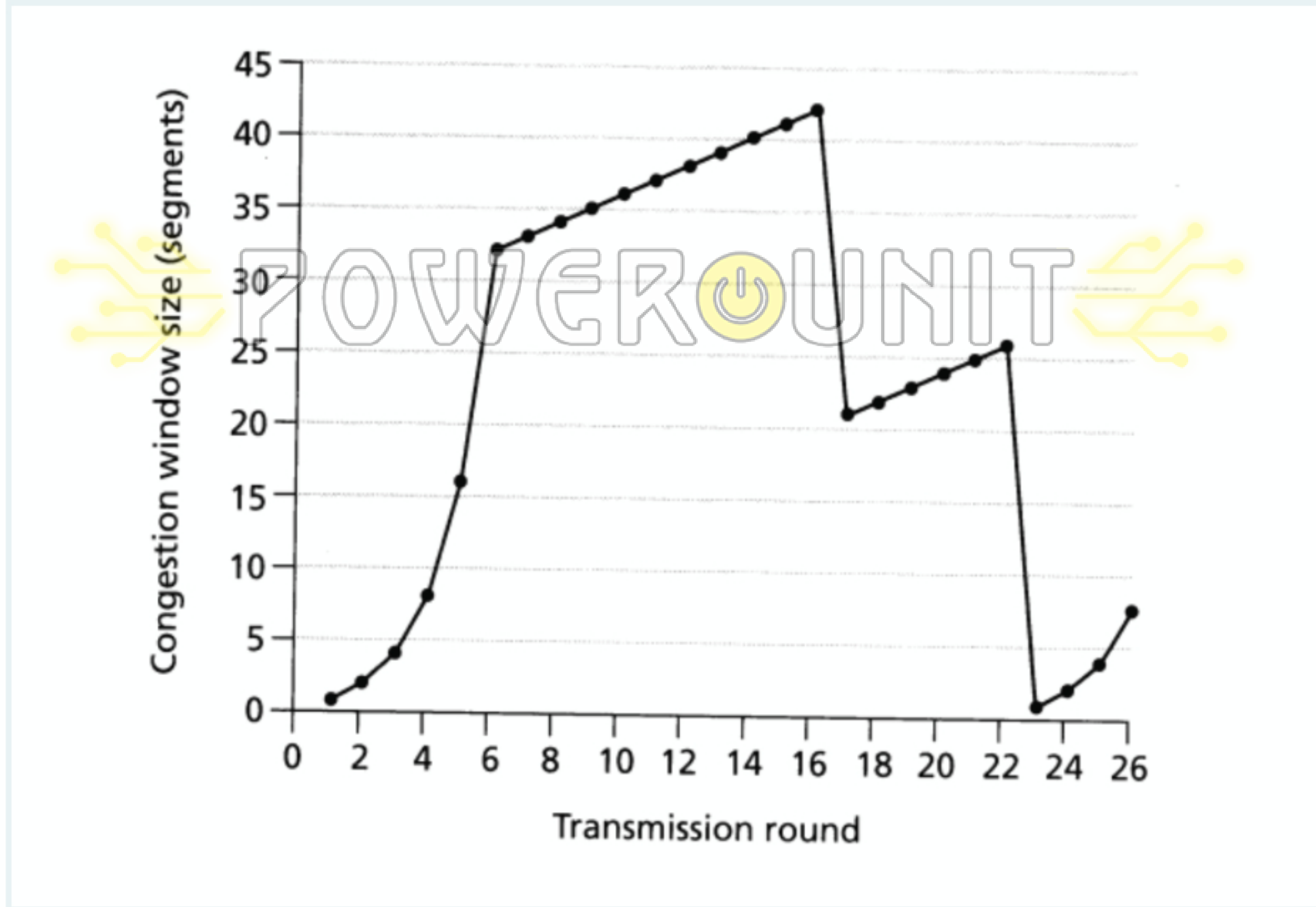
25

The picture below shows the behavior of a TCP Reno. Identify time intervals where TCP congestion-avoidance is operating. * (-/2 Points)



25

The picture below shows the behavior of a TCP Reno. Identify time intervals where TCP congestion-avoidance is operating. *
(-/2 Points)



TCP congestion-avoidance is operating in the intervals [1,6] and [23,26]

- TCP congestion-avoidance is operating in the intervals [1,6] and [23,26]
- TCP congestion-avoidance is operating in the intervals [6,16] and [17,22]
- TCP congestion-avoidance is operating only in the interval [1,6]
- TCP congestion-avoidance is operating only in the interval [6,16]
- None of the mentioned



26

A channel has a bit rate of 20 Kbps and where a bit takes 36 msec for a round trip time. For what range of frame sizes does stop-and-wait give an efficiency of at least 80 percent? *
(-/2 Points)

- 1440 bits
- 2880 bits
- 144 bits
- 1728 bits
- None of the values mentioned

27

You have been allocated a class C network address of 211.1.1.0 and are using the default subnet mask of 255.255.255.0, how many hosts can you have? *
(-/2 Points)

- 254
- 256
- 512
- 32
- None of the values mentioned

28

Imagine the RTO values are expired and we did not receive any acknowledgment to reliable packets. What will be the new values of RTO (i.e., X1, X2, and X3), shown in the figure, respectively? *
(-/2 Points)

RouterC							
IP-EIGRP neighbors for process 44							
H	Address	Interface	Hold	Uptime	SRTT	RTO	Q
			(sec)	(ms)			Cnt Num

28

Imagine the RTO values are expired and we did not receive any acknowledgment to reliable packets. What will be the new values of RTO (i.e., X1, X2, and X3), shown in the figure, respectively? *

(-/2 Points)

RouterC									
IP-EIGRP neighbors for process 44									
H	Address	Interface	Hold (sec)	Uptime (ms)	SRTT	RTO	Q Cnt	Seq Num	
0	192.168.0.1	Se0	11	00:03:09	800	X1	0	6	
1	192.168.1.2	Ef0	12	00:34:46	100	X2	0	4	
1	192.168.2.3	Se1	13	00:34:46	20	X3	0	8	

- 5000, 5000, 5000
- 5000, 900, 300
- 5000, 600, 200
- 4800, 600, 200
- 5000, 300, 720