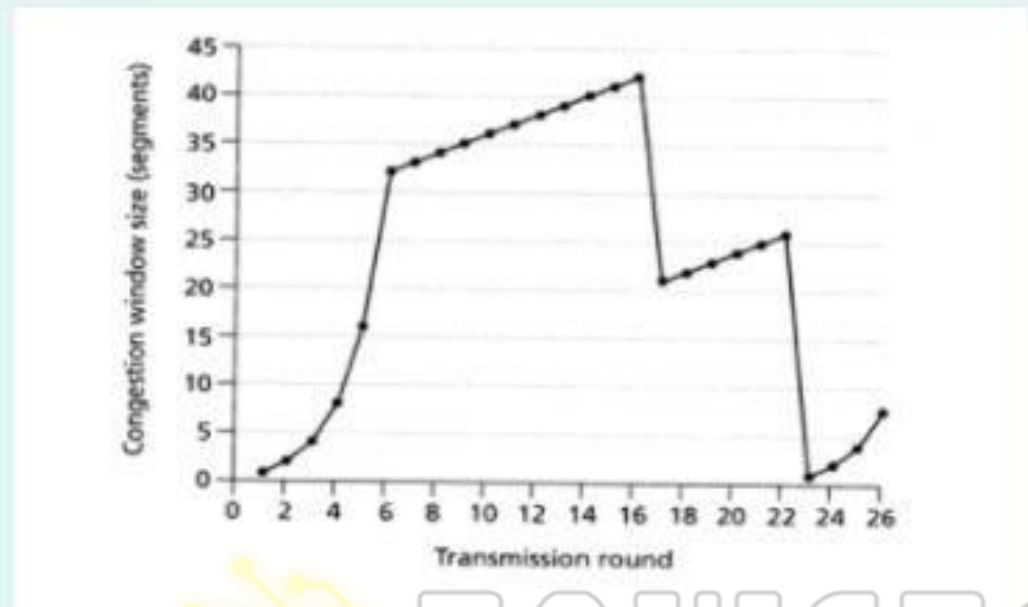The picture below shows the behavior of a TCP Reno. Consequently, what is the *ssthreshold* value at the 18th transmission round?

- ● 21
- ○ 42
- ○ 32
- ○ 13
- ○ 26

Repeaters work at which layer of the OSI model?

○ Data link

○ Transport

○ Network

● Physical

○ Session

Clear my choice

What is the purpose of Split Horizon?

○ Tells the router there is a link breakage

○ Informs all neighbor routers that two routes exist

● Information received on an interface cannot be sent back out the same interface

○ Tells the router the destination is unreachable

○ It prevents the regular update messages from reinstating a route that has gone down

Clear my choice

The picture below shows the behavior of a TCP Reno. Consequently, identify time intervals where TCP congestion-avoidance is operating.
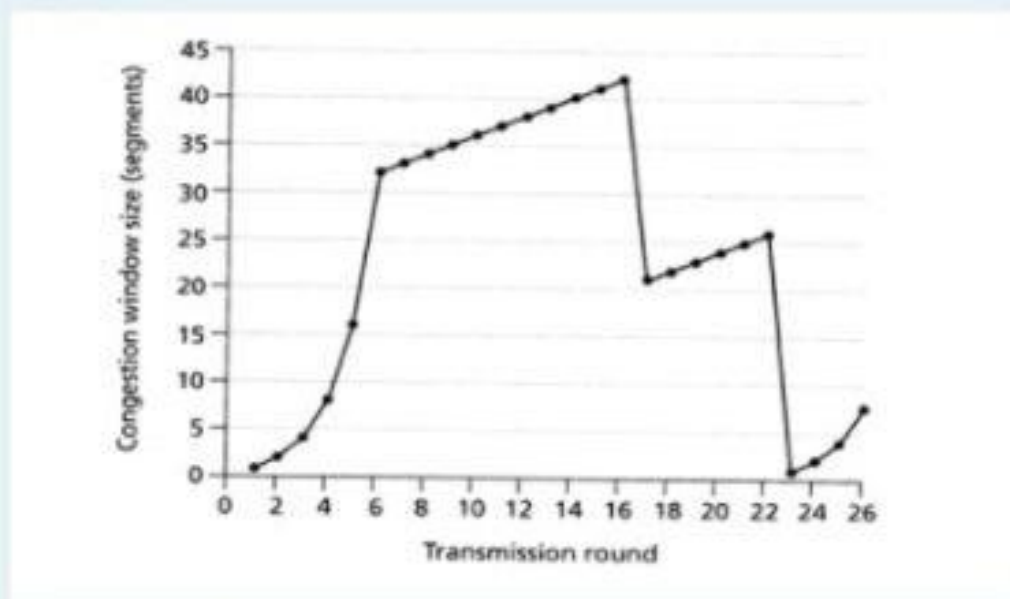

○ TCP congestion-avoidance is operating only in the interval [6,16]

● TCP congestion-avoidance is operating in the intervals [6,16] and [17,22]

○ None of the mentioned

○ TCP congestion-avoidance is operating only in the interval [1,6]

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

When referring to the figure below, consider that R2 wants to find a route to network X with ID 192.168.1.0/24 using t Time left 1:06:25
Which of the following belongs to a valid entry in R2 routing table?
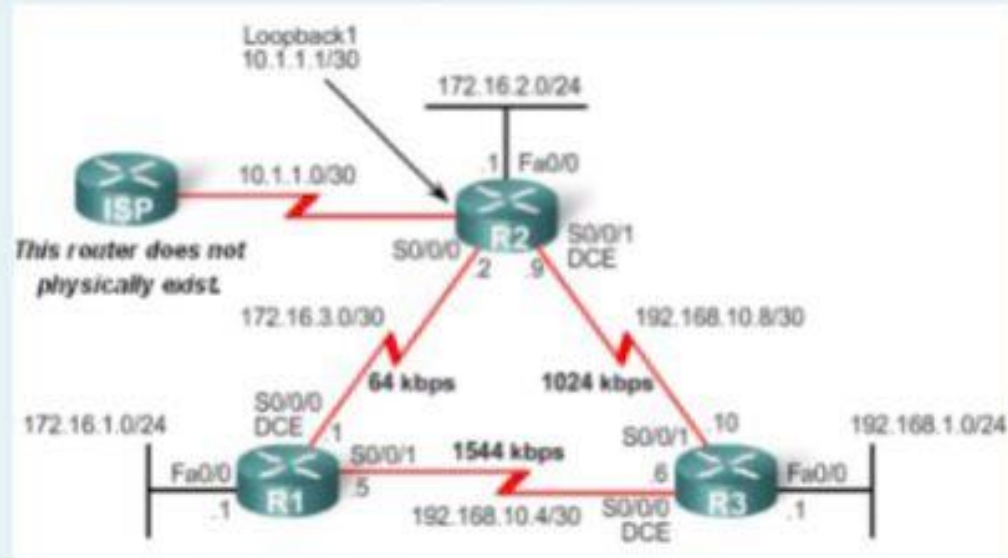
○ 192.168.1.0/24 [110/98] via 192.168.10.9 s0/0/1

○ 192.168.1.0/24 [120/1] via 192.168.10.10 s0/0/1

○ 192.168.1.0/24 [120/2] 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 [90/2172416] via 192.168.10.10 s0/0/1

The picture below shows the behavior of a TCP Reno. Consequently, identify time intervals where TCP slow-start is operating.
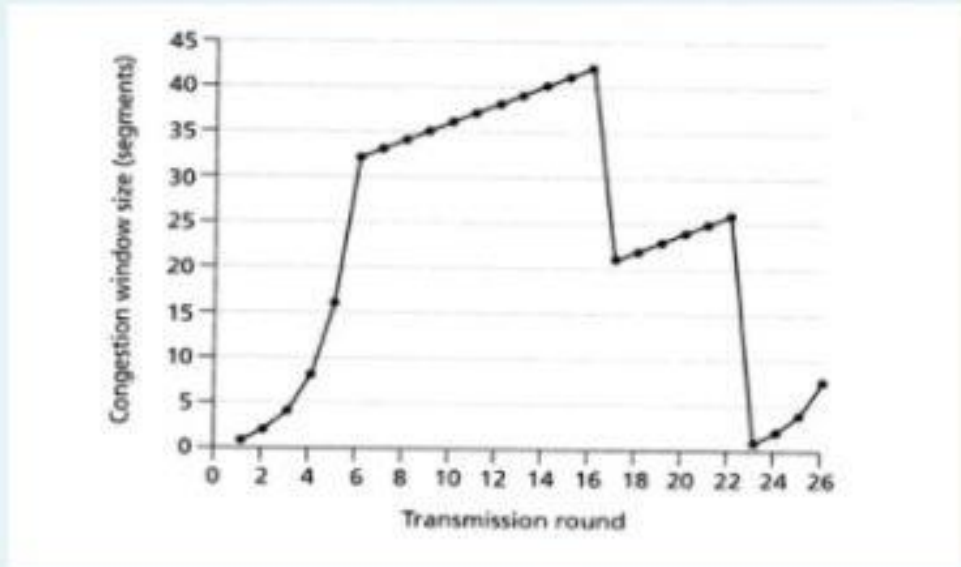
○ TCP slow-start is operating in the intervals [6,16] and [17,22]

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

○ TCP slow-start is operating only in the interval [6,16]

○ None of the mentioned

○ TCP slow-start is operating only in the interval [1,6]

Clear my choice

When referring to the figure below, what is the best route for routing table set by OSPF for those ends (PC0 and Server0)?
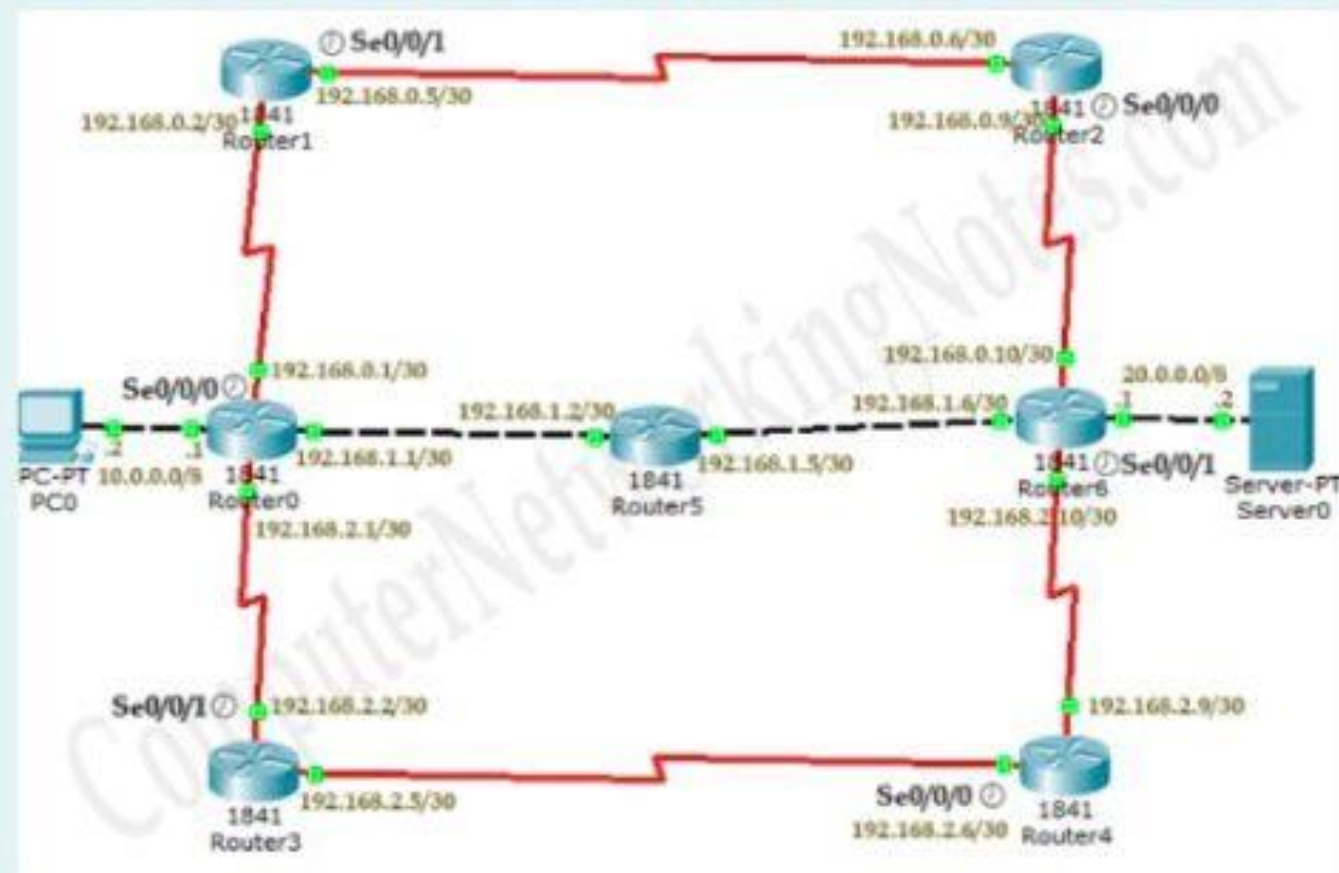
○ 2000

○ route R0-R1-R2-R6

● route R0 - R5 - R6
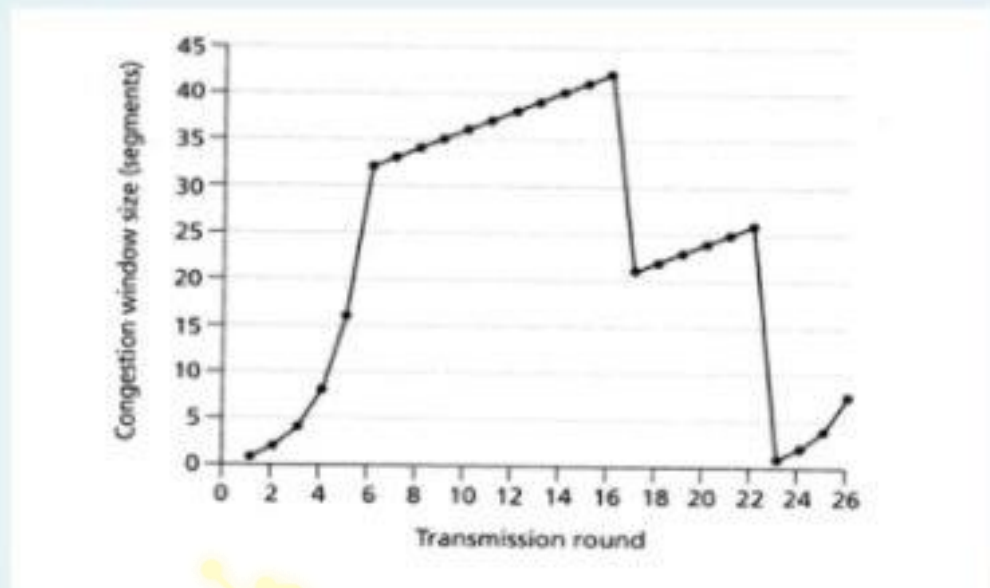
In EIGRP, the best path is known as the successor, where as backup path is known as :

- ○ None of the mentioned

- ● Feasible successor

- ○ There is no backup route in EIGRP

- ○ Default route

- ○ Back-up route

Clear my choice

The picture below shows the behavior of a TCP Reno. Consequently, what is the *ssthreshold* value at the 24th transmission round?

○ 42

○ 26

● 13

○ 32

○ 21

While studying the figure below, 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? (Tip: the other lines are fast Ethernet and have surely a BW of 100Mbps)

○ 2000

○ 4687

○ 2
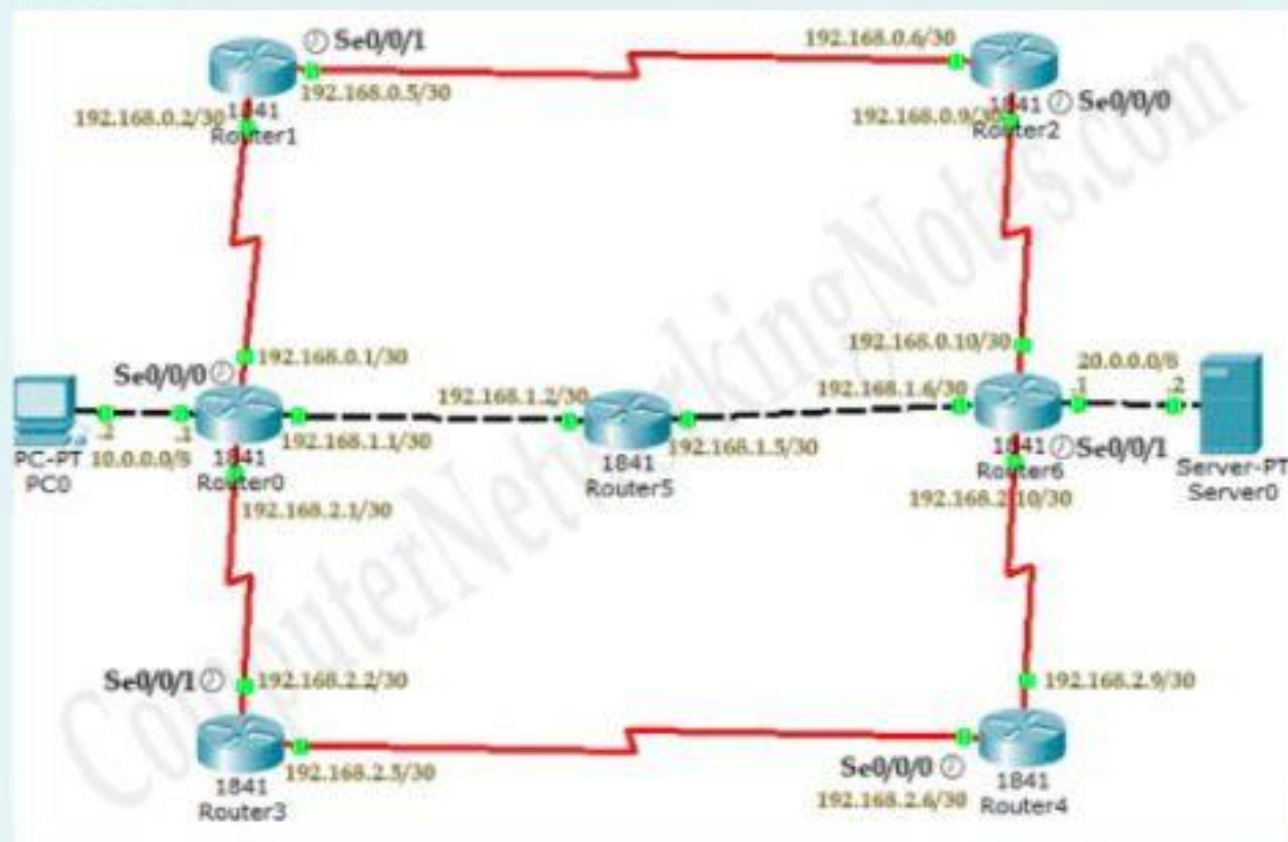
Which of the following Ethernet media standards currently in use where it uses 1550 nm optics (only one lane) to make it compatible with existing test equipment and infrastructure and is considered a port type for single-mode fiber that can reach up to 10km?

○ 100GBASE-SR10

○ 40GBASE-T

○ 100GBASE-ER4

● 40GBASE-FR

○ 100GBASE-FR

Clear my choice

When referring to the figure below, consider that R2 wants to find a route to network X with ID 192.168.1.0/24 using the EIGRP.
Which of the following belongs to a valid entry in R2 routing table?
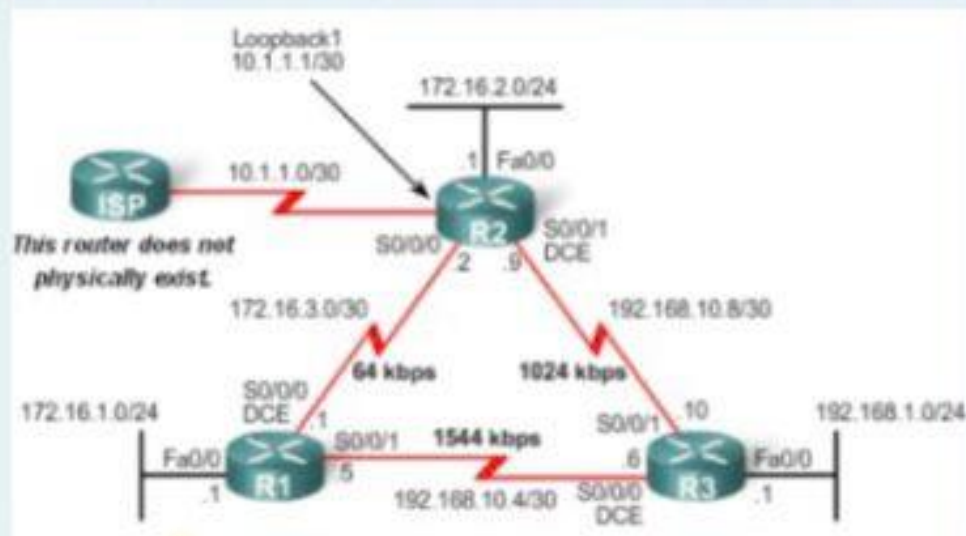
- ○ 192.168.1.0/24 [120/3014400] via 192.168.10.10 s0/0/1

- ○ 192.168.1.0/24 [110/3014400] 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 [90/2172416] via 192.168.10.10 s0/0/1

While studying the figure below, 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? (Tip: the other lines are fast Ethernet and have surely a BW of 100Mbps)

Se0/0/1
192.168.0.6/30
192.168.0.5/30
192.168.0.2/30 1841
Router1
192.168.0.9/3 1841 Se0/0/0
Router2

192.168.0.1/30
192.168.0.10/30
20.0.0.0/8
Se0/0/0
192.168.1.2/30
192.168.1.6/30
192.168.1.1/30
1841 192.168.1.5/30
PC-PT 10.0.0.0/8 1841
PC0 Router0
1841
Router5
1841 Se0/0/1
Router6
Server-PT
Server0
192.168.2.1/30
192.168.2.10/30

Se0/0/1 192.168.2.2/30
192.168.2.9/30

Se0/0/0
1841
192.168.2.5/30
192.168.2.6/30 Router4
1841
Router3
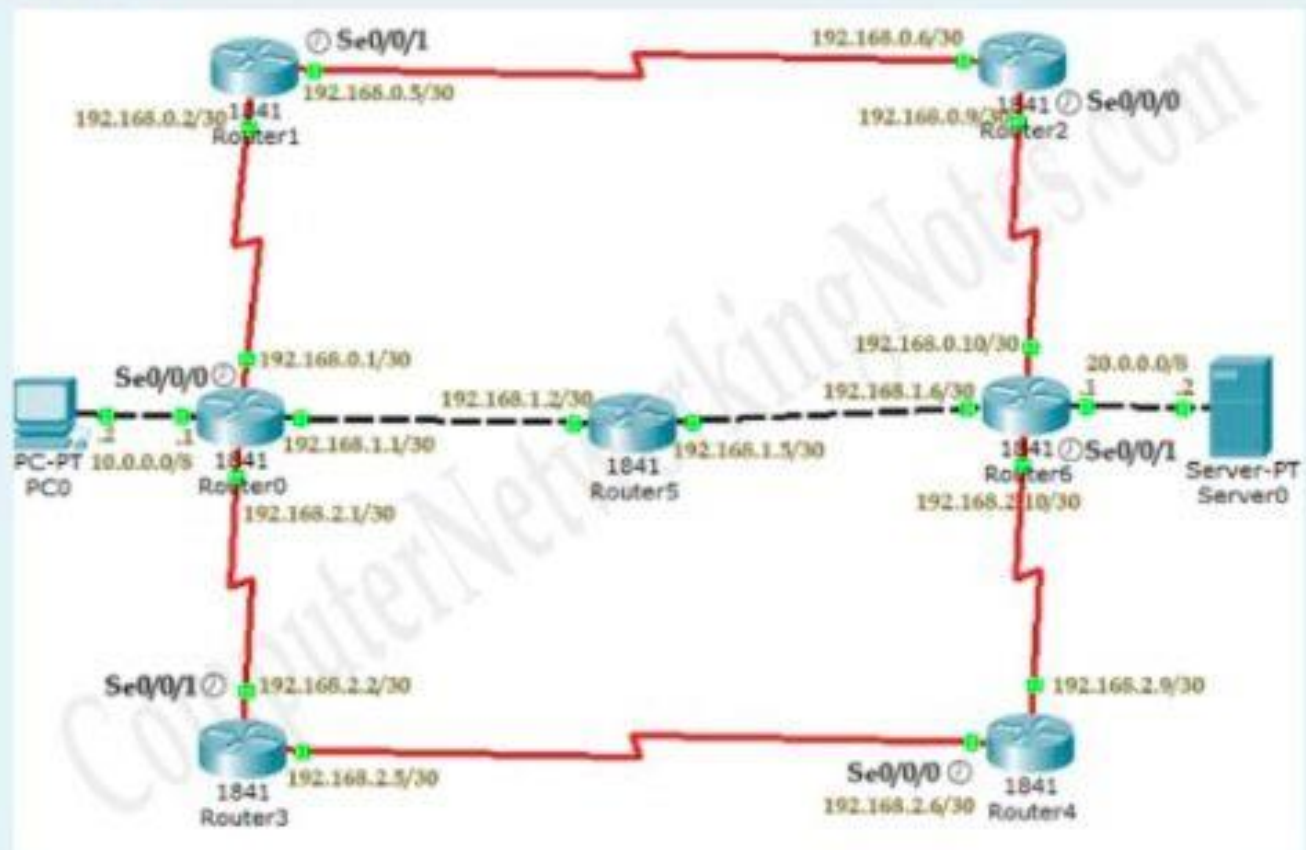
○ 2

● 4687

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

140.25.0.0/16

−0− −1− −2− −3−   −4− −5− −6− −7−

−0− −1− ••• −30− −31−   −0− −1− ••• −14− •15•

−0− −1− ••• −6− −7−
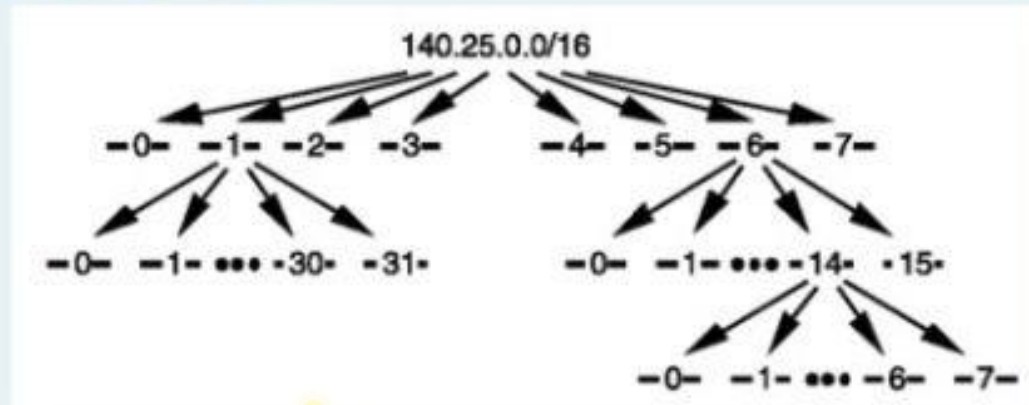
○ None of the mentioned

○ 140.25.221.128/26

○ 140.25.224.0/19

◉ 140.25.192.0/23

○ 140.25.96.0/19

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?

- ● 1440 bits

- ○ 1728 bits

- ○ 144 bits

- ○ None of the values mentioned

- ○ 2880 bits

Clear my choice

The picture below shows the behavior of a TCP Reno.
Consequently, what are the values of X5 and X6, respectively?

Initial state
cwnd=9, Slow start phase

0
1
2
3 → Ack(3)
4
5 → NAck(3)
6 → NAck(3)
7 → NAck(3)
8 → NAck(3)
→ NAck(3)

cwnd=X1 9
10 → NAck(3)
→ NAck(3)

cwnd=X2 1
cwnd=X3
cwnd=X4 11 → Ack(11)

→ Ack(12)

cwnd=X5 12
cwnd=X6 13

ssthresh=X8, cwnd=X7 14
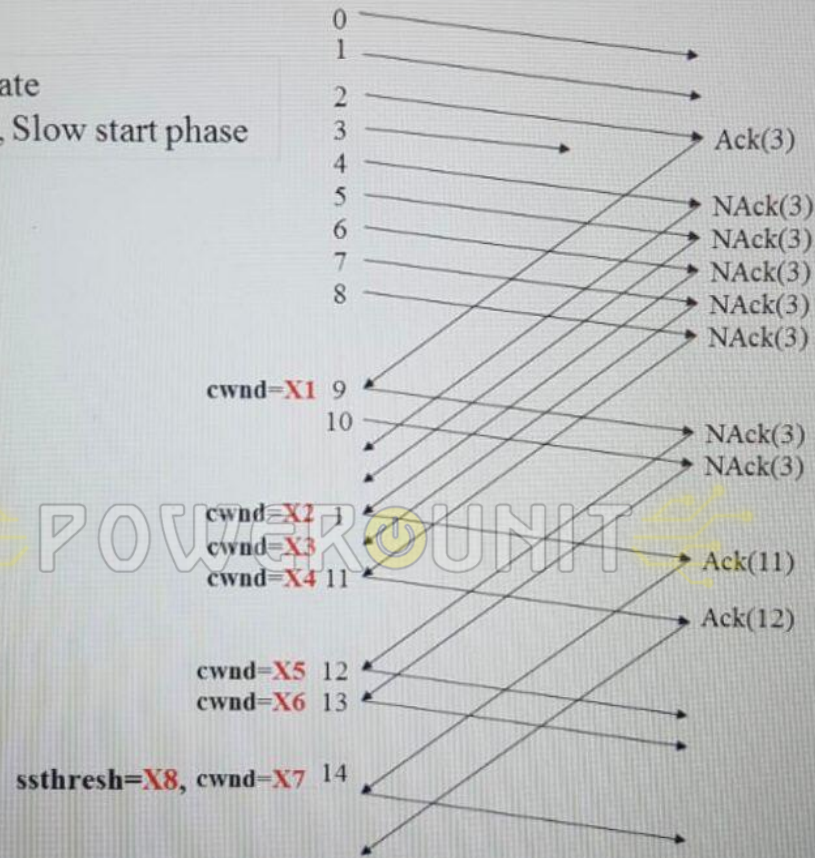
○ 10, 11

○ 12, 9

○ 12, 13

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 position just after the following succession of events: (i) A sends initial frames 0,1,2,3 and receives acknowledgment from B for 0, 1, and 2, (ii) A sends frames 4, 5, and 6 and B acknowledges 5 and the ACK is received by A.

○ 7 0

○ 7 0 1 2 3

◉ 7 0 1 2

○ 6 7 0 1 2

○ 7 0 1

Clear my choice

The picture below shows the behavior of a TCP Reno.
Consequently, what are the values of X3 and X4, respectively?

Initial state
cwnd=9, Slow start phase

0
1
2
3 → Ack(3)
4
5 → NAck(3)
6 → NAck(3)
7 → NAck(3)
8 → NAck(3)
→ NAck(3)

cwnd=X1 9
10 → NAck(3)
→ NAck(3)

cwnd=X2 1
cwnd=X3
cwnd=X4 11 → Ack(11)

→ Ack(12)

cwnd=X5 12
cwnd=X6 13

ssthresh=X8, cwnd=X7 14

○ 12, 9

○ 9, 12

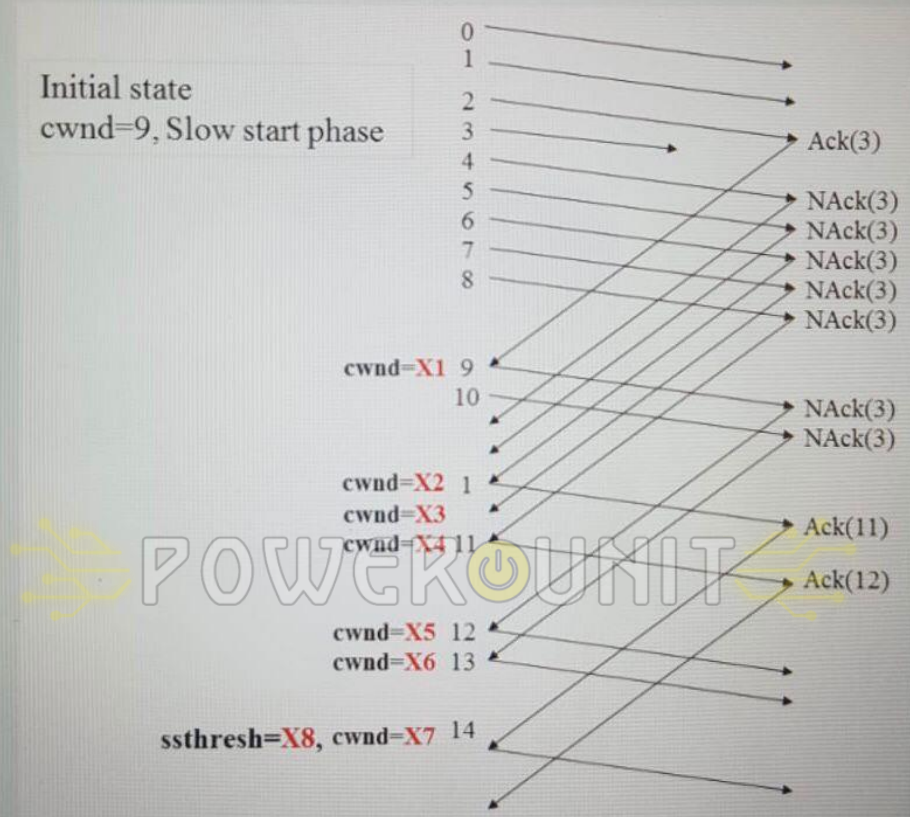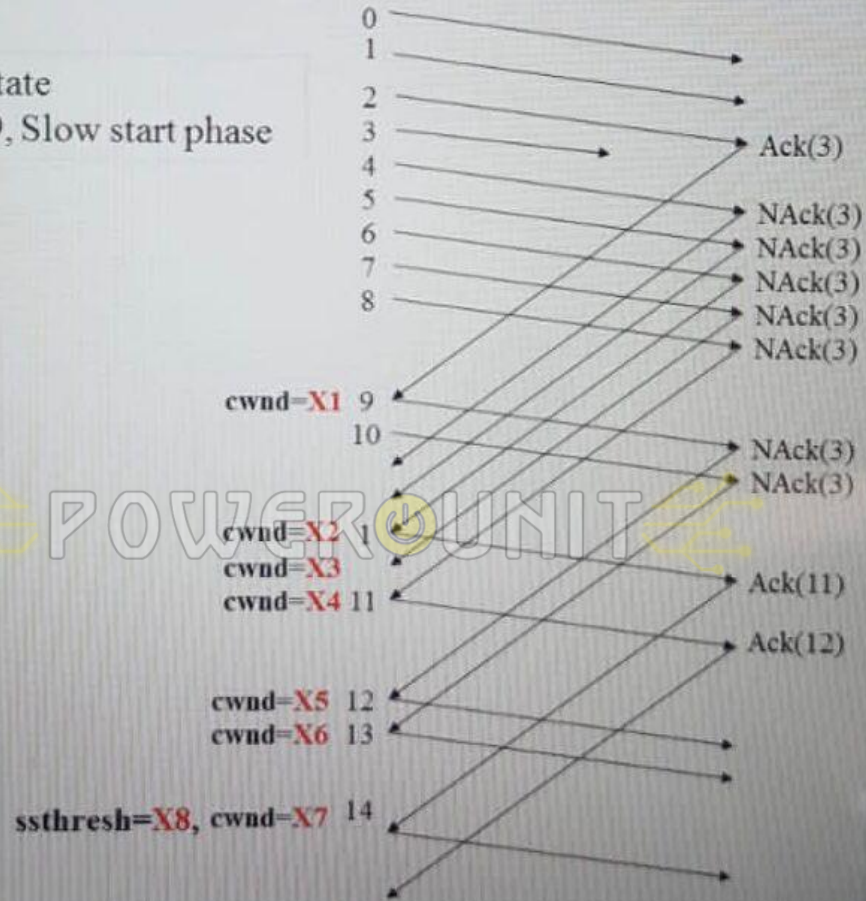○ 10, 11

The picture below shows the behavior of a TCP Reno.
Consequently, what are the values of X1 and X2, respectively?

Initial state
cwnd=9, Slow start phase

0
1
2
3   → Ack(3)
4
5   → NAck(3)
6   → NAck(3)
7   → NAck(3)
8   → NAck(3)
                   → NAck(3)

cwnd=X1 9
10   → NAck(3)
                   → NAck(3)

cwnd=X2 1
cwnd=X3
cwnd=X4 11   → Ack(11)

                   → Ack(12)

cwnd=X5 12
cwnd=X6 13

ssthresh=X8, cwnd=X7 14
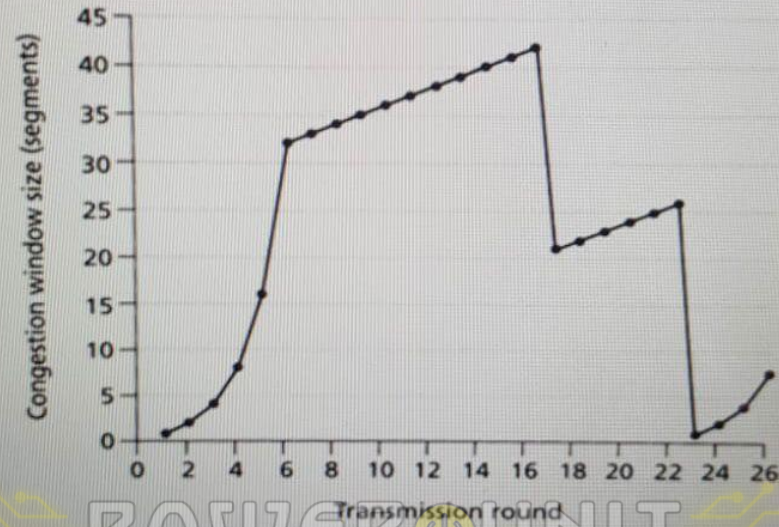
○ 9, 12

○ 12, 13

The picture below shows the behavior of a TCP Reno. Consequently, what is the *ssthreshold* value at the first transmission round?

◉ 32

○ 13

○ 26

○ 21

When studying the following figure, 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  2000  X1     0    6
1  192.168.1.2  Et0       12     00:34:46  30    X2     0    4
1  192.168.2.3  Sel       13     00:34:46  80    X3     0    8
```

● 5000, 200, 480

POWEROUNIT

○ None of the mentioned

○ 5000, 5000, 5000

○ 2000, 180, 480

○ 5000, 180, 480

Clear my choice

If we want to send data at a rate of 9000 bps through a channel with bandwidth of 3000 Hz. What is the minimum SNR (signal to noise ratio) required?
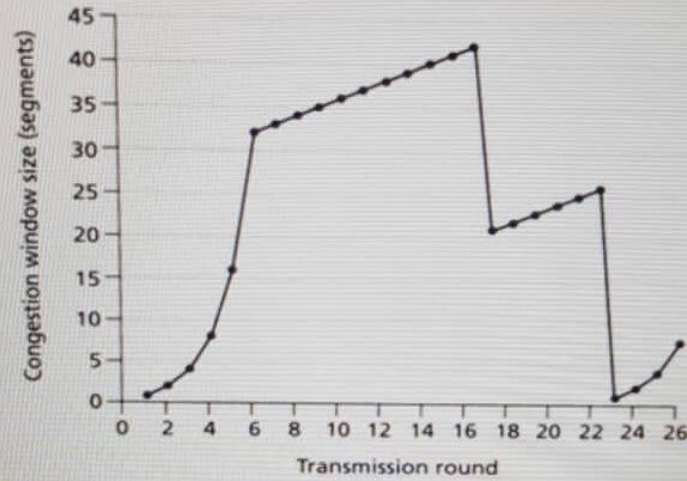
○ 127

○ 1000000

○ 8

○ 63

○ 7

The picture below shows the behavior of a TCP Reno.
Consequently, after the 22nd transmission round, is segment
loss detected by a triple duplicate ACK or by a timeout event?

○ None of the mentioned

○ Two duplicate ACKs

⦿ Timeout event

○ Both "Triple duplicate ACKs" and "Timeout event"

○ Triple duplicate ACKs

Clear my choice

When studying the following figure, 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), respectively?

RouterC
IP-EIGRP neighbors for process 44

H	Address	Interface	Hold (sec)	Uptime	SRTT (ms)	RTO	Q Cnt	Seq Num
0	192.168.0.1	Se0	11	00:03:09	2000	X1	0	6
1	192.168.1.2	Et0	12	00:34:46	30	X2	0	4
1	192.168.2.3	Sel	13	00:34:46	80	X3	0	8

○ 5000, 5000, 5000

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. Which one of the following host addresses can be assigned to Subnet #6-14-2?

140.25.0.0/16

−0− −1− −2− −3−   −4− −5− −6− −7−

−0− −1− ••• −30− −31−   −0− −1− ••• −14− •15•

−0− −1− ••• −6− −7−
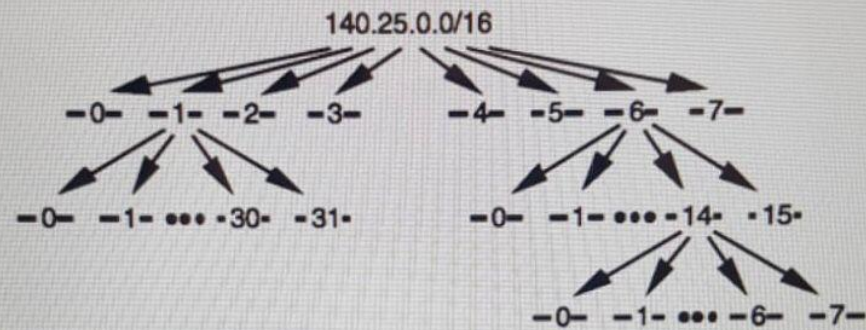
◉ 140.25.199.254/23

○ 140.25.220.131/26

○ 140.25.96.1/19

○ 140.25.198.1/23

○ 140.25.127.254/19

Clear my choice