

1. A

2.  $8201 \text{ km} \approx 8200 \text{ km}$

$$\frac{8200}{200000} = \frac{41}{1000} = 41 \text{ ms}$$

$$\frac{40 \text{ KB}}{20 \text{ M}} = \frac{40 \times 8}{20} \times 10^{-3} = 16 \text{ ms}$$

$$16 + 41 = 57 \text{ ms} \quad A$$

3. A

4.  $2^{32}$   
 $TTL = 60 \text{ s}$      $C = \frac{W}{T}$      $\frac{2^{32}}{60} \times 8 = 2^{29} \times \frac{64}{60} \approx 2^{29} \Rightarrow B$     d. C

5. B

6. C

7. C

8. IP1: 200.1.1000|0000.0/20

IP2: 200.1.1000|0000.0/22

IP3: 200.1.1000|0000.0/24

IP: 200.1.1000|0101.48

A

10.  $2^4 \cdot 8 \mu\text{s} + \frac{1600 \times 8}{80 \text{ M}} = 2^7 \mu\text{s} + \frac{1600}{10} \mu\text{s} = (2^7 + 160) \mu\text{s}$

$$\frac{1600 \times 8}{2^7 + 160} = \frac{16 \times 8 \times 100}{16(2^3 + 10)} = \frac{100 \times 8}{18} = \frac{400}{9} \text{ M kbps} \Rightarrow A$$

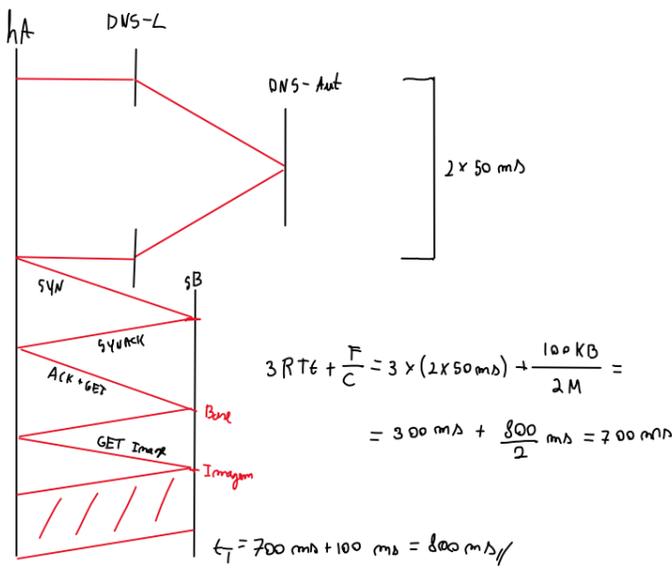
11. C

12. B

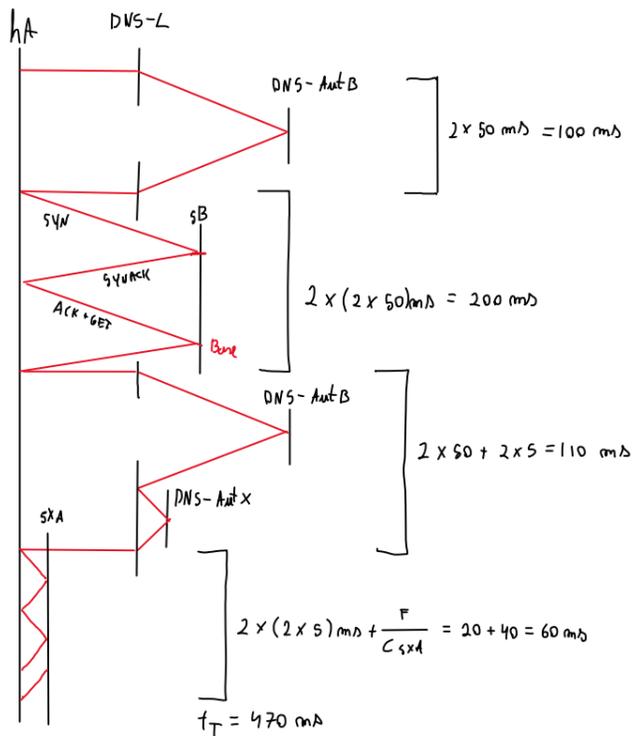
II

1.1.	Origen	Destino	Protocolo	Contenido
	hA	DNS-Local	DNS	Query - IP de B.com
	DNS-Local	DNS-AutB	DNS	Query - IP de B.com
	DNS-AutB	DNS-Local	DNS	Reply - IP de B.com
	DNS-Local	hA	DNS	Reply - IP de B.com
	hA	sB	HTTP	Get - Base
	sB	hA	HTTP	Base
	hA	sB	HTTP	Get - Imagen
	sB	hA	HTTP	Imagen

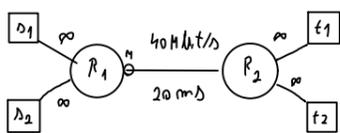
1.2



1.3	Origen	Destino	Protocolo	Contenido
	hA	DNS-Local	DNS	Query - IP de B.com
	DNS-Local	DNS-AutB	DNS	Query - IP de B.com
	DNS-AutB	DNS-Local	DNS	Reply - IP de B.com
	DNS-Local	hA	DNS	Reply - IP de B.com
	hA	sB	HTTP	Get - Base
	sB	hA	HTTP	Base
	hA	DNS-Local	DNS	Query - IP de img. B.com
	DNS-Local	DNS-AutB	DNS	Query - IP de img. B.com
	DNS-AutB	DNS-Local	DNS	Reply - IP de DNS-AutX
	DNS-Local	DNS-AutX	DNS	Query - IP de img. B.com
	DNS-AutX	DNS-Local	DNS	Reply - IP de img. B.com
	DNS-Local	hA	DNS	Reply - IP de B.com
	hA	sXA	HTTP	Get - Imagen
	sXA	hA	HTTP	Imagen



2.1

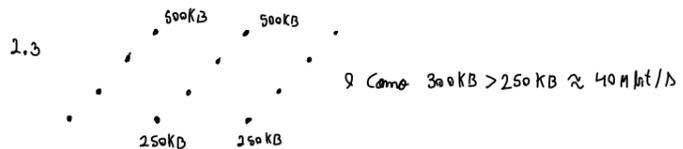


$$W_1 + W_2 = 40 \text{ M bit/s} \cdot 2 \cdot 20 \text{ ms} = 1600 \text{ K bit} \Rightarrow 200 \text{ KB}$$

2.2  $\frac{300 \text{ KB}}{40 \text{ M kbps}}$

$$RTT = 2 \cdot 20 \text{ ms} + \frac{300 \text{ KB}}{40 \text{ M kbps}}$$

$$W_1 + W_2 = RTT \cdot 40 \text{ M kbps} = 300 \text{ KB} + 200 \text{ KB} = 500 \text{ KB}$$



2.4  $W_1 - W_2 = 150 \text{ KB}$

↓ Problema 1a.c)2

$$W_1' = \frac{W_1}{2} \quad \& \quad W_2' = \frac{W_2}{2}$$

$$W_1' - W_2' = \frac{W_1}{2} - \frac{W_2}{2} = 75 \text{ KB}$$

2.5  $50/50$