EXERCISE 1

104.18.60.21
104.18.61.21
172.67.219.46
Having multiple IP addresses means the website can handle high traffic.

EXERCISE 2

HOST	REACHABLE	NOTES
www.unsw.edu.au	YES	
www.getfittest.com.au	NO	Not a valid web address
www.mit.edu	YES	
www.intel.com.au	YES	
www.tpg.com.au	YES	
www.hola.hp	NO	.hp isn't a valid domain suffix
www.amazon.com	YES	
www.tsinghua.edu.cn	YES	
www.kremlin.ru	NO	The kremlin site might have increased security on the site to avoid cyber attacks as it is a government website
8.8.8.8	YES	

EXERCISE 3

1. Columbia Trace: columbiaTraceroute.txt

   Number of routers: 22
   Number on UNSW network: 5
   Crosses pacfic ocean: between 7 and 9. Router 8 is in Hawaii (IP address: 113.197.15.99)

2. UCLA Trace: uclaTraceroute.txt
   Tokyo Trace: tokyoTraceroute.txt
   Lancaster Trace: lancasterTraceroute.txt

   The routes diverge after router 3 which is within the UNSW network. However they rejoin at the aarnet router (IP address: 138.44.5.0) which is located in Kensington.

3. i) Singapore to UNSW Trace: sinToUnswTraceroute.txt
      UNSW to Singapore Trace: unswToSinTraceroute.txt

      IP Address for Singapore: 202.150.221.170

   ii) Telstra to UNSW Trace: telstraToUnswTraceroute.txt
      UNSW to Telstra: unswToTelstraTraceroute.txt

      IP Address for Telstra: 203.50.5.178

   Yes, there are common routers in the forward and reverse routes in both traces however the same IP addresses are not observed. This is likely due to the fact there are dedicated input and output interfaces in the routers to deal with incoming and outgoing traces.

EXERCISE 4

1. Distance to Brisbane: 913km, Time: 0.00304s
   Distance to Manilla: 6270km, Time: 0.0209s
   Distance to Berlin: 16090km, Time: 0.5363s

2. No the delays are not constant because there can be queueing in the various routers used, resulting in delays that may not occur at other times.

3. Not in Switzerland.

4. Processing and transmission delays depend on packet size while queueing and propogation delays do not.