

#### LAB 1 Answer 4

Speed of light = 186000 miles/s

Server	Ping Time	Round Trip Distance	Time lower bound (SOL)
<a href="http://www.cs.purdue.edu">www.cs.purdue.edu</a> (Purdue)	0.350 ms	<2 miles	0.01 ms
<a href="http://www.iupui.edu">www.iupui.edu</a> (Indianapolis)	5.8 ms	134.6 miles	0.72 ms
104.129.31.245 (Chicago)	7.8 ms	245.6 miles	1.32 ms
64.212.106.84 (New York)	11.4 ms	1532.2 miles	8.189 ms
72.134.185.203 (Los Angeles)	50 ms	4189 miles	22.5 ms
51.38.71.101 (London)	98 ms	7972 miles	42.86 ms
219.250.36.130 – (Soeul South Korea)	165 ms	13266 miles	71.322 ms

For the servers at Purdue, Indianapolis and Chicago, the time difference is mostly due to latency encountered due to the material of the transmitting medium, and due to the latency encountered in routers, gateways etc.

For the servers in New York, and Los Angeles, the time difference gap is not too high because they are in the same country and are likely to have straight line paths. The time difference is again due to the latency it encounters in the link layer.

In London and Soeul (across the oceans), the paths are not that straight and there are not many route options for sending the ping. Because of these there is a higher time difference.