**The Internet**

**Secure Communication**

1. **Name the four principles of network security.**
   1. **\_\_\_Confidentiality\_\_\_**
   2. **\_\_\_Integrity\_\_\_\_\_\_\_\_\_**
   3. **\_\_\_Authenticity\_\_\_\_\_**
   4. **\_\_\_Reliability\_\_\_\_\_\_\_**

**2. Complete the descriptions of these communication exploits:**



1. **eavesdropping**

**compromises confidentiality**

**fix with encryption**

1. **DDOS**

**compromises reliability**

**fix with scaling up**

1. **Spoofing**

**compromises authenticity**

**fix with it’s hard to fix… certificate authorities--but how do you know those are legit? key-signing parties, as a last resort?**

**DNS:**

1. **How many separate queries are involved in resolving the following URLs?**
   1. [**www.google.com**](http://www.google.com) **\_\_\_\_\_\_\_\_\_3\_\_\_\_\_\_\_\_\_\_**
   2. [**www.drive.google.com**](http://www.drive.google.com) **\_\_\_\_\_\_\_\_\_\_4\_\_\_\_\_\_\_\_\_\_\_**
   3. [**www.personalblog.wordpress.com**](http://www.personalblog.wordpress.com) **\_\_\_\_\_ \_\_\_4\_\_\_\_\_\_\_\_\_\_**
2. **How many separate data transmissions were sent in order to resolve the URLs listed above?**

[**https://technet.microsoft.com/en-us/library/cc775637(v=ws.10).aspx**](https://technet.microsoft.com/en-us/library/cc775637(v=ws.10).aspx)

* 1. **\_\_\_\_\_\_\_8\_\_\_\_\_\_\_**
  2. **\_\_\_\_\_\_\_10\_\_\_\_\_\_\_**
  3. **\_\_\_\_\_\_\_10\_\_\_\_\_\_\_**

**Networking Definitions and Concepts:**

1. **What is a data packet? Why are they necessary for the internet?**

**A data packet transfers a small amount of data across a network (carries information about the source and destination, along with the data itself). They are necessary because the physical wires connecting us to the internet are limited in size. Also, it’s much easier to send smaller pieces of information due to reliability: it is much easier to resend a smaller piece of information than having to resend an entire music or video file upon a failure.**

**2. What is a protocol? Provide some examples.**

**\_\_\_\_\_\_\_\_HTTP(S)\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_SMTP\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_TCP\_\_\_\_\_\_\_\_\_\_\_**