Suggested Answers to
NS Activity 3.2, 4.1, 4.2, 4.3

I. **Activity NS 3.2**

1. Alice picks session key K_S.
2. Alice sends $K_B^+\{K_S\}$ to Bob.
3. Bob computes $K_B^-\{K_B^+\{\{K_S\}\}\}$ to get K_S.

II. **Activity NS 4.1**

1. 128.30.2.155.
2. The DNS server running at (UDP) port 53 of 202.65.247.31.
3. The local DNS server for the machine that asks for the DNS lookup. (See the screenshot on Slide 18.)
4. The response is from a DNS server that isn't officially responsible for the lookup domain.

III. **Activity NS 4.2**

2. Use **dig MX mit.edu**.
3. Eight servers (refer to the logged output on Slide 20). We can load balance between the servers.
4. dmz-mailsec-scanner-4.mit.edu has IP address 18.9.25.15. [*My first server was …scanner-4…; yours might be another one*.]
5. Whois verifies that the IP address belongs to Massachusetts Institute of Technology.

IV. **Activity NS 4.3**

1. (*Answered for you already*.) According to my experiments, the "new answers" are those in the Authority section.
2. Given the answer to Q1 above, the new answers are of type NS. The type means authoritative name servers.
3. 18.9.25.14.
4. By **dig @asia2.akam.net dmz.mailsec-scanner-3.mit.edu**, 18.9.25.14. Yes, the answer agrees with the one in Q3. [*In case you don't get an answer from asia2.akam.net, try another authoritative name server*.]
5. 95.101.36.64.
6. It belongs to Akamai Technologies.
7. Akamai is a *content distribution network* (CDN). They host customers' content in a large global network of servers for faster and more scalable distribution to requesting clients worldwide.