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| Advanced Security 1 |
| Lab 2 |
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# Question 1:

Key: 23 / -3

ONE VARIATION TO THE STANDARD CAESAR CIPHER IS WHEN THE ALPHABET IS "KEYED" BY USING A WORD. IN THE TRADITIONAL VARIETY, ONE COULD WRITE THE ALPHABET ON TWO STRIPS AND JUST MATCH UP THE STRIPS AFTER SLIDING THE BOTTOM STRIP TO THE LEFT OR RIGHT. TO ENCODE, YOU WOULD FIND A LETTER IN THE TOP ROW AND SUBSTIT UTE IT FOR THE LETTER IN THE BOTTOM ROW. FOR A KEYED VERSION, ONE WOULD NOT USE A STANDARD ALPHABET, BUT WOULD FIRST WRITE A WORD (OMITTING DUPLICATED LETTERS) AND THEN WRITE THE REMAINING LETTERS OF THE ALPHABET. FOR THE EXAMPLE BELOW, I USED A KEY OF "RU MKIN.COM" AND YOU WILL SEE THAT THE PERIOD IS REMOVED BECAUSE IT IS NOT A LETTER. YOU WILL ALSO NOTICE THE SECOND "M" IS NOT INCLUDED BECAUSE THERE WAS AN M ALREADY AND YOU CAN'T HAVE DUPLICATES.

# Question 2:

Key: 9 / -17

# Question 3:

NIST is about to announce the new hash algorithm that will become sha-3. This is the result of a six-year competition, and my own skein is one of the five remaining finalists (out of an initial 64). It's probably too late for me to affect the final decision, but I am hoping for "no award." it's not that the new hash functions aren't any good; it's that we don't really need one. When we started this process back in 2006, it looked as if we would be needing a new hash function soon. The SHA family (which is really part of the md4 and md5 family), was under increasing pressure from new types of cryptanalysis. We didn't know how long the various sha-2 variants would remain secure. But it’s 2012, and SHA-512 is still looking good. Even worse, none of the SHA-3 candidates is significantly better. Some are faster, but not orders of magnitude faster. Some are smaller in hardware, but not orders of magnitude smaller. when sha-3 is announced, i'm going to recommend that, unless the improvements are critical to their application, people stick with the triedand true sha-512. at least for a while. i don't think nistis going to announce"no award"; i think it's going to pick one. and of the five remaining, i don't really have a favorite. of course i want skein to win, but that's out of personalpride, not for some objective reason. and while i like some more than others, i think any would be okay. well, maybe there's one reason nist should choose skein.skein isn't just a hash function, it's the large-block cipher threefish and a mechanism to turn it into a hash function. i think the world actually needs a large-block cipher, and ifnist chooses skein, we'll get one.

# Question 4

# Question 5

Encryption used: Base64

On Thursday Google announced that the next version of Android will have encryption enabled by default, protecting user data from anyone who lacks password access. It's a feature lauded by privacy advocates, and matches Apple's new iPhone policy. But Google's new policy isn't very helpful if you own an Android phone that won't be updated to Android L for a while (if ever). But let's not get too bent out of shape. We're here to share how you can encrypt your Android devices running the Jelly Bean and Kit Kat systems. That's right: Privacy features are already built in. You just need to turn them on.

# Question 6

Encryption used: Hexidecimal

On Thursday Google announced that the next version of Android will have encryption enabled by default, protecting user data from anyone who lacks password access. It's a feature lauded by privacy advocates, and matches Apple's new iPhone policy. But Google's new policy isn't very helpful if you own an Android phone that won't be updated to Android L for a while (if ever). But let's not get too bent out of shape. We're here to share how you can encrypt your Android devices running the Jelly Bean and Kit Kat systems. That's right: Privacy features are already built in. You just need to turn them on.

# Question 7

Language: Swahili

CHAMA Cha Mapinduzi pamoja na vijana wake kupitia umoja wao wa UVCCM, kimemshukia aliyekuwa Mwenyekiti wa Tume ya Mabadiliko ya Katiba, Jaji Joseph Warioba, kikimtaka aache kujidanganya, kwani suala la Katiba mpya haliwezi kuwa ajenda ya uchaguzi mkuu, mwakani. Kwa upande wa UVCCM, imemtaka Jaji Warioba, aache mara moja kutumia dhamana aliyokuwa amepewa ya kuwa Mwe nyekiti wa Tume ya Mabadiliko ya Katiba, kwani muda wake umeishamalizika kisheria. Kauli hizo zilitolewa kwa nyakati tofauti na viongozi wa chama hicho, ikiwa ni siku chache tangu Jaji Warioba atoe maoni yake kuhusiana na Rasimu iliyopendekezwa na Bunge Ma alum la Katiba, ambapo alikosoa kutokana na kuachwa kwa baadhi ya maoni ya wananchi. Aidha, ameendelea kusisitiza kuwa, atakuwa Rais wa Watanzania, bila kujali dini, kabila au vyama, hivyo maendeleo ya serikali yake hayatabagua. Akizungumza jana mjini hap a kwenye mkutano wa kampeni uliohudhuriwa na maelfu ya watu ambao alikiri kuwa ni mkubwa ambao hajawahi kuuona, amewahakikishia kuwa ataiendesha nchi kwa ustaarabu na si kwa udikteta kama ambavyo baadhi ya watu wamekuwa wakidai. Hata baada ya kuchaguliwa , mimi sitabadilika, nitabaki kuwa mtoto wenu yule yule John Magufuli, alisema na kuongeza; Nitaiendesha nchi kwa ustaarabu, sitaiendesha nchi kwa udikteta pamekuwa na watu wanazungumza, kwa sababu nazungumza ukweli na ukweli utabaki ukweli kweli. Watu wan abaki kutishiana. Nyie wana Chato waelezeni ukweli kwamba nilipokuwa waziri nilikuwa nachunga ng’ombe, nilikuwa nakamua maziwa