

# Lab 1: Ciphers and Fundamentals

## A Introduction

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No	Description	Result
1	Go to: <b>http://asecuritysite.com/Challenges</b>  and click on the “Start Challenge” button, and see if you can score over 30 points.	Your score:
2	Using: http://asecuritysite.com/Encryption/testprime  Test for the following prime numbers:	91: [Yes] [No] 421: [Yes] [No] 1449: [Yes] [No]
3	Using: http://asecuritysite.com/Encryption/gcd  Determine the GCD for the following:	88, 46:  105, 35:
4	Using: http://asecuritysite.com/coding/ascii  Determine the Base 64 and Hex values for the following strings:	Hello:  hello:  HELLO:
5	Using: http://asecuritysite.com/coding/ascii  Determine the following ASCII strings for these encoded formats:	bGxveWRz  6E6170696572  01000001 01101110 01101011 01101100 01100101 00110001 00110010 00110011
6	Using: http://asecuritysite.com/Coding/exor  Determine the EX-OR of “hello” ex-ORed with the letter ‘t’	Hex:  Base 64:  Is the result printable in ASCII? [Yes][No]
7	What is the result of $53,431 \text{ mod } 453$ ?	

<b>8</b>	Generate a random number from:  <a href="http://asecuritysite.com/Encryption/js01">http://asecuritysite.com/Encryption/js01</a>	How many hex characters does the result have?
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## B Frequency Analysis

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Now see if you can crack the **five minute cracking challenge** for:

<http://asecuritysite.com/challenges/scramb>

## C Character mapping

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Complete the following table for the characters:

Char	Decimal	Binary	Hex	Oct	HTML
(Space)					
a					
}					
Ã					
ÿ					

## D Test

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1. Crack some Caesar codes at: <http://asecuritysite.com/tests/tests?sortBy=caesar>
2. Determine some hex conversions at: <http://asecuritysite.com/tests/tests?sortBy=hex01>
3. Determine some Base64 conversions: <http://asecuritysite.com/tests/tests?sortBy=ascii01>
4. Now complete the test at: <http://asecuritysite.com/tests/tests?sortBy=crypto01>