

MINIPLenty: Crypto Factzors

The below phrases have been encrypted using advanced ministry encryption primitives. Decode and report back any hidden messages!

$$Enc_0(p) = p \oplus 0xC7$$

$$Enc_3(p) = ((p \& 3) \ll 2) + ((p \& 12) \ll 4) + ((p \& 48) \gg 4) + ((p \& 192) \gg 2)$$

$$Enc_1(p) = (27p + 33) \bmod 256$$

$$Enc_4(p) = RIJNDAEL_SBOX[p]$$

$$Enc_2(p) = (7^p * p) \bmod 256$$

$$Enc_5(p) = \begin{cases} 0, & p = 0 \\ Enc_5\left(\frac{p}{2}\right) * 6 \bmod 256, & p \bmod 2 = 0 \\ Enc_5(p - 1) + 11 \bmod 256, & p \bmod 2 = 1 \end{cases}$$

```
1. 030 012 035 030 021 027 036 087 032 016 034 026 028
   024 029 030 042 036 045 045 090 043 035 051 063 054
   050 040; 361
2. 083 205 003 003 071 030 111 044 017 107 098 071 151
   017 179 232 057 031 017 206 206 112; 85
3. 088 107 190 097 097 243 113 194 220 024 167 165 206
   112 236 112 120; 1007
4. 101 161 105 109 236 152 097 169 034 042 097 037 101
   025 042 169 085 170 166 230 226 234; 1829
5. 138 234 221 198 068 120 116 181 037 112 189 189 180
   112 014 095 232 185 053 087 139 097 139 217; 341
6. 227 037 026 111 089 150 095 111 211 089 131 023 023
   002 161 211 211 095 084 186; 21
```

It appears the ministry is employing some kind of anti-analysis countermeasures! The below obfuscated clue may prove useful:

```
hint = lambda p,k: ''.join(chr((ord(x)+k)%256) for x in p)
exec(hint('_\x88}\x8c\x93\x8a\x8e:W:\x86{\x87|~{:yFyyFyyyT:uyBByyu\x8
3wEyyyE\x83C?LOPC:\x80\x89\x8c:\x83:\x83\x88:\x8c{\x88\x81\x7fB\x86\x
7f\x88ByyCCw',0xe6))
```

