Assignment\_3 Solution (from textbook)

3.1 5730

3.2 5730

3.3 0101111011010100

The attraction is that each hex digit contains one of 16 different characters

(0–9, A–E). Since with 4 binary bits you can represent 16 different patterns,

in hex each digit requires exactly 4 binary bits. And bytes are by definition 8

bits long, so two hex digits are all that are required to represent the contents

of 1 byte.

3.8 Overflow (result -179, which does not fit into an SM 8-bit format)

3.9 -105 - 42 = -128 (can be -147, but it saturated)

3.10 -105 – (-42) = -105+42 = -63

3.11 151 + 214 = 255 (can be 365, but it saturated)

3.20 201326592 in both cases.

3.21 jal 0x00000000

3.22

0×0C000000 = 0000 1100 0000 0000 0000 0000 0000 0000

= 0 0001 1000 0000 0000 0000 0000 0000 000

sign is positive

exp = 0×18 = 24 - 127 = - 103

there is a hidden 1

fraction = 0

answer = 1.0 × 2 (-103)