4.
a. process:
to binary first: 00000000 00000000 00000000 11111111
so we know it is positive. A positive code's true code is its two's complement.
So decimal is: 2^0+2^1+2^2+…+2^7=255

b. process:
to binary first: 11111111 11111111 11111111 00000000
so we know it is negative.
Then we need to change it to its true code.
True code: 10000000 00000000 00000001 00000000
So decimal is: $-2^8 = -256$

c. process:
to binary first: 1111111 11111111 11111111 11111111
so we know it is negative.
Then we need to change it to its true code.
True code: 10000000 00000000 00000000 00000001
So decimal is: -2^0 = -1

5.
a. process:
to binary first: 0 00000000 00000000000000000000000
so decimal is: 0

b. process:
to binary first: 0 10000111 00111010000000000000000
so it is positive.
Exp = 2^7+2^2+2^1+2^0=135
E = Exp – bias = 135 – 127 = 8
Frac : 1.0011101 * 2^8
So 100111010 = 2^8+2^5+2^4+2^3+2^1 = 314
So decimal is: 314

c. process:
to binary first: 1 10000001 01100000000000000000000
so it is negative.
Exp = 2^7+2^0=129
E = Exp – bias = 129 -127 = 2
Frac : 1.011 *2^2
So 101.1 =2^2+2^0+2^-1=5.5
So decimal is: -5.5

6.

a. process:
First convert to binary first.
It is positive so sign bite is 0.
M = 1.0
Frac (23bites):00000000000000000000000(binary)
E=0
Bias = 127
Exp = 127 = 01111111 (binary)
So binary:00111111 10000000 00000000 00000000
Hex: 0x3F800000

b. process:
Convert to binary first.
It is negative so sign bite is 1.
2.5 = 0010.1000 = 1.01*2^1
Frac(23bites):01000000000000000000000
E=1
Bias = 127
Exp = 128 = 10000000(binary)
So binary:11000000 00100000 00000000 00000000
Hex: 0xC0200000

c.process:
Convert to binary first.
It is positive so sign bite is 0.
13.25 = 1101.01 = 1.10101 * 2^3
Frac(23bites):10101000000000000000000
E = 3
Bias = 127
Exp = 130 = 10000010(binary)
So binary:01000001 01010100 00000000 00000000
Hex: 0x41540000