

Student Number: 20053722Name: Bryan Hoang

3. (10 points)

(a) **Answer:**

$$1101\,0110\,0101_2 \Rightarrow 2^{11} + 2^{10} + 2^8 + 2^6 + 2^5 + 2^2 + 2^0 = \boxed{3429}_{10} \in [0, 2^{12} - 1].$$

(b) **Answer:**

$$37853_{10} = 2^{15} + 2^{12} + 2^9 + 2^8 + 2^7 + 2^6 + 2^4 + 2^3 + 2^2 + 2^0 \Rightarrow 37853_{10} = \boxed{1001\,0011\,1101\,1101_2}.$$

(c) **Answer:**

$$9487428_{10} = 2^{23} + 2^{20} + 2^{15} + 2^{14} + 2^{10} + 2^6 + 2^2 \Rightarrow 9487428_{10} = \boxed{1001\,0000\,1100\,0100\,0100\,0100_2}.$$