Asynchronous Task 4:

1. Find the bitwise OR, bitwise AND, and bitwise XOR of the following bit strings.

    a. 11 1001 1010 and 01 1111 1010

11 1001 1010

01 1111 1010

11 1111 1010 - OR

01 1001 1010 - AND

10 0110 0000 - XOR

    b. 10 1011 1110 and 11 1011 1110

10 1011 1110

11 1011 1110

11 1011 1110 - OR

10 1011 1110 - AND

01 0000 0000 - XOR

    c. 10 1001 0110 and 11 1010 0100

10 1001 0110

11 1010 0100

11 1011 0110 - OR

10 1000 0100 - AND

01 0011 0010 - XOR

2. Show that p ∨ (q ∧ r) and (p ∨ q) ∧ (p ∨ r) are logically equivalent.

p	q	r	q ^ r	p v (q ^ r)	p v q	p v r	(p v q) ^ (p v r)
T	T	T	T	T	T	T	T
T	T	F	F	T	T	T	T
T	F	T	F	T	T	T	T
T	F	F	F	T	T	T	T
F	T	T	T	T	T	T	T
F	T	F	F	F	T	F	F
F	F	T	F	F	F	T	F
F	F	F	F	F	F	F	F