

For $A < B$:

		$B_1 B_0$			
		00	01	11	10
$A_1 A_0$	00		1	1	1
	01			1	1
	11				
	10			1	

$$A < B = \overline{A_1} \overline{A_0} B_0 + \overline{A_1} B_1 + \overline{A_0} B_1 B_0$$

For $A = B$:

		$B_1 B_0$			
		00	01	11	10
$A_1 A_0$	00	1			
	01		1		
	11			1	
	10				1

$$A = B = (A_1 \odot B_1)(A_0 \odot B_0)$$

For $A > B$:

		$B_1 B_0$			
		00	01	11	10
$A_1 A_0$	00				
	01	1			
	11	1	1		1
	10	1	1		

$$A > B = A_0 \overline{B_1} B_0 + A_1 A_0 \overline{B_0} + A_1 \cdot \overline{B_1}$$