

Table 9.1 CDMA Example

(a) User's codes

User A	1	-1	-1	1	-1	1
User B	1	1	-1	-1	1	1
User C	1	1	-1	1	1	-1

(b) Transmission from A

Transmit (data bit = 1)	1	-1	-1	1	-1	1	
Receiver codeword	1	-1	-1	1	-1	1	
Multiplication	1	1	1	1	1	1	= 6

Transmit (data bit = 0)	-1	1	1	-1	1	-1	
Receiver codeword	1	-1	-1	1	-1	1	
Multiplication	-1	-1	-1	-1	-1	-1	= -6

(c) Transmission from B, receiver attempts to recover A's transmission

Transmit (data bit = 1)	1	1	-1	-1	1	1	
Receiver codeword	1	-1	-1	1	-1	1	
Multiplication	1	-1	1	-1	-1	1	= 0

(d) Transmission from C, receiver attempts to recover B's transmission

Transmit (data bit = 1)	1	1	-1	1	1	-1	
Receiver codeword	1	1	-1	-1	1	1	
Multiplication	1	1	1	-1	1	-1	= 2

(e) Transmission from B and C, receiver attempts to recover B's transmission

B (data bit = 1)	1	1	-1	-1	1	1	
C (data bit = 1)	1	1	-1	1	1	-1	
Combined signal	2	2	-2	0	2	0	
Receiver codeword	1	1	-1	-1	1	1	
Multiplication	2	2	2	0	2	0	= 8