XOR OPERATION: SIMPLE RULE

XOR returns 1 when two bits differ; 0 when the bits match

0 XOR 0	0 XOR 1	1 XOR 0	1 XOR 1
= 0	= 1	= 1	= 0

1 Calculate an 8-bit XOR manually

```
  1 0 1 1 0 0 1 0
  0 1 1 0 1 0 0 1
-----------------
  1 1 0 1 1 0 1 1
```

ANSWER

10110010 XOR 01101001 = 11011011

DES ROUND 1: XOR WITH THE SUBKEY

Combine the 48-bit expanded right half with the 48-bit K16

EXPANDED RIGHT HALF 206A041A41A8

ROUND 1 SUBKEY K16 CB3D8B0E17F5

1 XOR the six corresponding hexadecimal bytes

BYTE 1	BYTE 2	BYTE 3	BYTE 4	BYTE 5	BYTE 6
20 XOR CB = EB	6A XOR 3D = 57	04 XOR 8B = 8F	1A XOR 0E = 14	41 XOR 17 = 56	**A8 XOR F5 = 5D**

FINAL XOR OUTPUT (48 BITS)

206A041A41A8 XOR CB3D8B0E17F5

= EB578F14565D