EX: Find the product of the following binary numbers and express the answer in octal.

101011 · 011001

SOL'N: We do binary multiplication in the same way as decimal long multiplication:

```
                    1  0  1  0  1  1
                x   0  1  1  0  0  1
                    1  0  1  0  1  1
             1  0  1  0  1  1  0  0  0
          1  0  1  0  1  1  0  0  0  0

          1  1  1  1  2  2  2  0  1  1
```

Where there are 2's, we must carry a 1 to the next column, since in binary we have 2 is 10. Also, 3 is 11.

1 0 0 0 0 1 1 0 0 1 1 binary

To convert to octal, we take three binary digits at a time (starting from the right end and working left), and we write the 3-bit binary numbers in decimal (0-7).

101011 · 011001 = 2063 octal