Convert the following binary numbers to octal (base 8) and to hexadecimal (base 16). (Hint: Note that three binary bits are exactly sufficient to represent each of the eight octal digits and four binary bits is exactly sufficient to represent each of the 16 hexadecimal digits.)

a) 1011110111_2

001|011|110|111

1 3 6 7

1367_8

0010|1111|0111

2 F 7

$2F7_{16}$

b) 10101.0111101_2

010|101.011|110|100

2 5 . 3 6 4

25.364_8

0001|0101.0111|1010

1 5 . 7 10 → A

$15.7A_{16}$