3) (5 pts) DSN (Base Conversion)

Convert 277 in base 8 to base 16. **Please show your work and put a box around your final answer.**

Convert 277 to binary as follows, substituting each octal value for its corresponding binary value in 3 bits, since $2^3 = 8$.

```
010 111 111
```

Now, regroup these bits by groups of 4, from the right:

```
0 1011 1111
```

Finally, convert each group of 4 bits to Hexadecimal, omitting leading 0s:

BF

Grading: 1 pt - if they tried to convert to decimal or binary
2 pts - if they converted to decimal or binary correctly
2 pts - for the correct answer

Note: Here is the conversion to through base 10:

$277_8 = 2 \times 8^2 + 7 \times 8 + 7 = 128 + 56 + 7 = 191$

16 | 191
16 | 11 R 15

11 = B, 15 = F, so the final answer is **BF.**