

5) (10 pts) ALG (Base Conversion)

(a) (5 pts) Convert FAD_{16} to octal.

Convert to binary

1111 1010 1101 1000

Realign bits (implied leading zeros for single 1 at beginning)

001 111 101 011 011 000

Translate to octal

1 7 5 3 3 0₈

Grading: 2 pts converting bits to binary, 2 pts realigning bits, 1 pt converting to octal

(b) (5 pts) Convert 2120_{10} to hexadecimal.

16 | 2120

16 | 132 R 8

16 | 8 R 4

16 | 0 R 8

8 4 8₁₆

Grading: 1 pt for each quotient and remainder (except 0), if solved differently, grade accordingly.