5) (10 pts) ALG (Base Conversion)

a) Convert the hexadecimal number AF2E9 to binary without first converting to the base 10 equivalent

A F 2 E 9

10 15 2 14 9 1010 1111 0010 1110 1001

1010 1111 0010 1110 1001

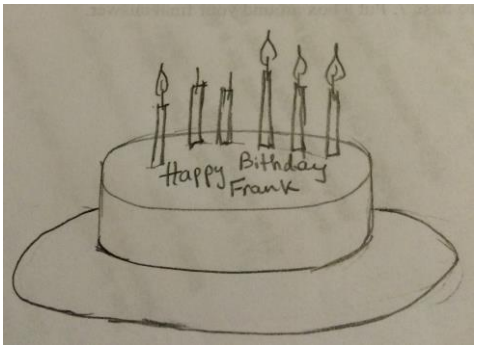
Grading: 5 pts total - 1 pt for each group of 4 bits. All 4 bits in the group have to be correct to get the point.

b) Frank is the team-lead for the software testing team at his job. He is celebrating his birthday. Some of his co-workers have baked a cake for the celebration and thought that it would be really cool to put candles on his cake to represent his age in binary. An unlit candle represents the 0 bit. From the pic of the cake below, how old is Max?

100111

32 4 2 1

= 32 + 4 + 2 + 1 = 39



Grading: 5 pts total
4 pts : 1 for decimal for each digit
1 pt for final answer

Note: Also give full credit for 32 + 16 + 8 + 1 = 57, though most students will read left to right.