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M.Sc. CS / AI & CS – Term 1
Computer Systems
Additional Exercises Week # 1 – Numbers

Question #1: Complete the following table, doing the necessary conversions.

Decimal	Binary	Octal	Hexadecimal
175			
	11001100		
		767	
			F9B

Question #2: Compute the 2's complement (in 8 bits) for the following decimal numbers:

Decimal	Binary	1's Complement	2's Complement
27			
80			
123			
128			

Question #3: Evaluate the expression Z = A + B – C in binary, where the values of A, B & C are given in the table below:

Z	A	B	C
	0001 1001	0010 0011	0001 0010
	0100 0001	0011 1111	0110 1000

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Question #4: Convert the following decimal numbers to equivalent Fixed point notation (2's Complement), using 1 sign bit, 9 bits for the real part and 6 bits for the fractional part?

Decimal Number	Fixed Point Representation (16 bits)
141.8125	
-412.21875	
-465.09375	