These questions are not about numerical base conversion, so try to solve them without translating to binary (or at least doing minimal conversion).

a) What is the least-significant digit in the binary representation of $746589236401265623059801274506457385680917553487047_{10}$

b) What are the three least-significant digits in the binary representation of the result of $398765879354534_{10} \times 8_{10}$

c) What are the five least-significant digits in the binary representation of $99999999999999999999999999_{16}$

d) How many digits would be needed to represent 6354_{10} in base-2?

e) What is the most-positive number that can be represented with six bits if those bits are used to represent numbers using unsigned binary? Express the answer in binary and then in decimal.

f) What is the most-positive number that can be represented with six bits if those bits are used to represent numbers using two's complement binary? Express the answer in binary and then in decimal.

g) What is the most-positive number that can be represented with six bits if those bits are used to represent numbers using a "tally" system, where each bit represents whether or not a single "thing" exists? Express the answer in binary and then in decimal.
Here is a common human system for counting using a tally system, for reference:

1	I	6	𝍸 I
2	II	7	𝍸 II
3	III	8	𝍸 III
4	IIII	9	𝍸 IIII
5	𝍸	10	𝍸 𝍸