Q4 _ answers. [pdf, md]

a) we know that $in1 = 1, 2, 3, 4$ and that $in2 = 5, 6$

∴ the function llrec $(in1, in2)$ should be equivalent to
$$llrec(\{1,2,3,4\}, \{5,6\})$$

⟹ $in1 \rightarrow next = llrec(in2, in1 \rightarrow next)$

which gives, $llrec(\{5,6\}, \{1,2,3\})$

and $\{5,6\} \rightarrow next = llrec(\{6\}, \{2,3\})$

⟹ $\{1, 2, 3\} \rightarrow next = llrec \{6\}, \{2, 3\}$

⟹ $\{6\} \rightarrow next = llrec(\{2,3\}, null)$
which give $\{2,3\}$

⟹ $\{6, 2, 3\}$

⟹ $\{1, 2, 3, 6, 2, 3\}$

⟹ $\{5, 6, 1, 2, 3, 6, 2, 3\}$

⟹ $\{1, 2, 3, 4, 5, 6, 1, 2, 3, 6, 2, 3\}$

b) Given $in1 = null$ and $in2 = 2$
we know that, llrec $(in1, in2)$ is equivalent to ~~llrec~~
$$llrec(null, \{2\})$$

which returns $\{2\}$