1. Looking at the ISBN numbers of some books, is the check digit still valid if you transpose any two adjacent digits? (That is, do ISBN 10 and ISBN 13 check digit schemes catch errors in swapping adjacent digits, like 138967221 → 1**83**967221?) Can you justify why or why not? (You may want to think about how you could represent this algebraically.)

2. Do the ISBN 10 and ISBN 13 check digit schemes catch errors in swapping digits that aren't necessarily adjacent, like 138967221 → 19**8**3**6**7221?