

## Problem 55: Dollar Bill Poker

Difficulty: Medium

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### Problem Background

How about a friendly game of poker? Don't worry – no poker experience is required. For our game we aren't playing the traditional way with a deck of cards. Rather, you will be reading serial numbers from dollar bills from our cyber bank and determining the best possible poker hand based on the digits of that serial number.

### Problem Description

Pay close attention to the following rules as they vary slightly from actual poker.

- Zeroes in the serial number are to be ignored and cannot be used in making your hand
- You may use a maximum of 5 digits from the 8 digit serial number
- You may reorder the digits (e.g. in order to form a "straight")
- Each set of serial numbers may produce multiple possible poker hands, but you are to identify only the best hand based on the hand ranks below

Possible Poker Hands in Highest to Lowest Rank:

Hand	Description	Example
FIVE OF A KIND	Five occurrences of the same digit	77777
FOUR OF A KIND	Four occurrences of the same digit	8888
FULL HOUSE	Three occurrences of one digit and two occurrences of another digit	22255
STRAIGHT	Five sequential, contiguous digits	34567
THREE OF A KIND	Three occurrences of the same digit	444
TWO PAIR	Two occurrences of one digit and two occurrences of another digit	6611
PAIR	Two occurrences of one digit	22
High Digit	The highest single digit found	9

## Sample Input

The first line of your program's input, received from the standard input channel, will contain a positive integer representing the number of test cases. Each test case will include:

- A single line containing an 8 digit serial number.

```
11
14912276
99027737
39217860
59977643
58276501
77437751
03999299
12145671
12340076
98764115
11223344
```

## Sample Output

For each test case, your program should output one line containing the serial number and the best hand achieved in the following format. The best hand should be displayed in all caps. In the event that the best hand is a high digit, print the digit.

<SERIAL NUMBER> = <BEST HAND>

```
14912276 = TWO PAIR
99027737 = FULL HOUSE
39217860 = 9
59977643 = STRAIGHT
58276501 = PAIR
77437751 = FOUR OF A KIND
03999299 = FIVE OF A KIND
12145671 = THREE OF A KIND
12340076 = 7
98764115 = STRAIGHT
11223344 = TWO PAIR
```