

# Easy Poker

## Description

In a standard 52-card deck of playing cards, every card has a rank and a suit. The thirteen possible ranks, in order from weakest to strongest, are 2, 3, 4, 5, 6, 7, 8, 9, 10, Jack, Queen, King, and Ace. We will abbreviate the last five of those as T, J, Q, K, and A. The four suits are clubs, diamonds, hearts, and spades, which we will abbreviate as C, D, H, S. A card is represented by its rank followed by its suit, so the 52 cards in the deck are:

2C	3C	4C	5C	6C	7C	8C	9C	TC	JC	QC	KC	AC
2D	3D	4D	5D	6D	7D	8D	9D	TD	JD	QD	KD	AD
2H	3H	4H	5H	6H	7H	8H	9H	TH	JH	QH	KH	AH
2S	3S	4S	5S	6S	7S	8S	9S	TS	JS	QS	KS	AS

## Five Card Hands

In the game of Easy Poker, here are the possible five card hands that can be made with five cards, in order from strongest to weakest. If a set of cards matches more than one of these, take the strongest hand. For example, 7H 8H 9H TH JH matches the definitions of Straight Flush, Flush, Straight, and High Card, but it is considered a Straight Flush.

**Royal Flush:** T, J, Q, K, and A of the same suit. Example: TD JD QD KD AD.

**Straight Flush:** Five consecutive cards of the same suit. (In Straight Flush, A can be considered as 1 (a card weaker than 2).) Examples: 7H 8H 9H TH JH; AC 2C 3C 4C 5C.

**Four of a Kind:** Four cards of the same rank, plus any other card. Example: 8C 8D 8H 8S JD.

**Full House:** Three cards of one rank and two cards of another rank. Example: 3C 3H 3S 5C 5D.

**Straight:** Five cards with consecutive ranks. (In Straight, A is a special card that can be considered as A (a card stronger than K) or 1 (a card weaker than 2).) Example: 6C 7D 8C 9H TH.

**Three of a Kind:** Three cards of the same rank, plus any two other different cards. Example: JC JH JS 2H KH.

**Two Pair:** Two cards of one rank and two cards of another rank, plus any other different card. Example: 8C 8H AC AD TH.

**Pair:** Two cards of one rank, plus any other three different cards. Example: 9H 9S 3D 4D QS.

**High Card:** Any hand that matches none of the above. Example: 3S 5C 6C 7C TS.

## Comparing Hands

When comparing two hands, the hand with the stronger type wins. If they have the same type, you must use tiebreaker rules.

**Two “Royal Flush”es:** The hands tie.

**Two “Straight Flush”es:** Look only at the final card in each consecutive sequence. The hand with the card with the highest rank wins. If they have the same highest rank, they tie. Note that this means that a 23456 straight flush beats an A2345 straight flush, since A is regarded as 1 here.

**Two “Four of a Kind”s:** The hand with the higher rank making up the four of a kind wins.

**Two “Full House”s:** Compare the three of a kinds within the hands. The hand with the higher rank making up the three of a kind wins.

**Two “Straight”s:** Look only at the final card in each consecutive sequence. The hand with the card with the highest rank wins. If they have the same highest rank, they tie.

**Two “Three of a Kind”s:** The hand with the higher rank making up the three of a kind wins.

**Two “Two Pair”s:** Compare the highest-ranking pair from each hand, then the lowest-ranking pair from each hand, then the remaining cards, then declare a tie.

**Two “Pair”s:** Compare the ranks of the pairs, then the ranks of the highest remaining cards, then the ranks of the next highest remaining cards, then the ranks of the final remaining cards, then declare a tie.

**Two “High Cards”s:** Sort each hand by rank, then compare the highest-ranked card from each hand, then the next-highest-ranked, and so on.

## Easy Poker

In our variant of Easy Poker, the player is given a number  $S$ . The player should find out the most powerful set with the sum of five cards is  $S$ . Note that the values of Jack, Queen, King, and Ace are 11, 12, 13, 1.

Just find out the ranks of five cards with most powerful set.

## Input

The first line contains an integer  $T$  indicating the total number of test cases. Each test case contains one line with one integer  $S$ .

- $1 \leq T \leq 100$
- $6 \leq S \leq 64$

## Output

For each test case, output the ranks of five cards in a line in order from weakest to strongest. If there are more than one solution, output any of one.

### Sample Input

4  
6  
64  
15  
47

### Sample Output

2 A A A A  
Q K K K K  
2 3 4 5 A  
T J Q K A