Alice and Michael is a young couple who are planning on having their first child. Their wish their son Nelson was born on a special date for both of them.

Alice has investigated in the internet and has found that the period of gestation is forty weeks. These forty weeks begin to count on the first day of the last menstrual cycle.

Michael is passionate about astrology and even more about the zodiac signs, he has asked Alice to investigate the range of dates that correspond to each sign.

Sign	Begin	End
Aquarius	January, 21	February, 19
Pisces	February, 20	March, 20
Aries	March, 21	April, 20
Taurus	April, 21	May, 21
Gemini	May, 22	June, 21
Cancer	June, 22	July, 22
Leo	July, 23	August, 21
Virgo	August, 22	September, 23
Libra	September, 24	October, 23
Scorpio	October, 24	November, 22
Sagittarius	November, 23	December, 22
Capricorn	December, 23	January, 20

Alice and Michael ask for help to calculate the date of birth of their son Nelson and his zodiac sign.

Input

The first line of input contains a single integer N, $(1 \leq N \leq 1000)$ which is the number of datasets that follow.

Each dataset consists of a single line of input that contains only eight digits that represent the date of the first day of the last menstrual cycle in format $MMDDYYYY$.

Output

For each dataset, you should generate one line of output with the following values: The dataset number as a decimal integer (start counting at one), a space, the date of birth in format $MM/DD/YYYY$, a space, and the name (in lowercase) of zodiac sign that correspond according to the date of birth.

Note: Considers leap years.

Sample Input

```
2
01232009
01232008
```

Sample Output

```
1 10/30/2009 scorpio
2 10/29/2008 scorpio
```