

## 6475 Effective Infection Time

You are estimating the threat level of quarantined zones that have been abandoned to the infection. One of the key variables in determining a zone's threat level is the EIT (Effective Infection Time). This information is essential for planning strike dates to reclaim quarantined zones. The EIT is calculated according to the following rules:

- The EIT is the result of a function of two dates: The infection date and the strike date.
- All years are in A.Z. (After Zombie).
- Every month counts for a fraction of an EIT after its last day has passed. This means the month of the strike date does not count for EIT.
- The first calendar year of the infection is calculated as  $1/2$  EIT.
  - If the end of the year is not reached, each month only counts for a fraction of the  $1/2$  EIT. If a zone was infected in January of the first year, then the  $1/2$  EIT is spread across 12 months ( $(1/2)/12 = \sim 0.0417$  EIT per month). If a zone was infected in March of the first year, then the  $1/2$  EIT is spread across 10 months ( $(1/2)/10 = 0.0500$  EIT per month).
  - If the end of the year is reached, the year counts as a full  $1/2$  EIT, regardless of the infection month. In other words, a zone infected in February of 15 A.Z. counts as only  $1/2$  (one-half) EIT **after** December 15 A.Z. A zone infected in December of the same year will also count as  $1/2$  EIT.
- All following years are calculated as 1 EIT. Each calendar month, beginning with January, counts for  $1/12$  EIT ( $\sim 0.0833$  EIT).
- Every zone infected on the same month will have the same EIT for any given strike date. Therefore only the month and year are given.

**The number and order of months in a calendar year remains the same as the modern Gregorian calendar.**

### Input

The first line will be an integer  $N$ , where  $1 \leq N \leq 50$  giving the number of zones. For each zone, a pair of lines will be provided:

- The first line contains the infection date. The second contains the strike date.
- The first integer of a date represents the month,  $M$  ( $1 \leq M \leq 12$ ), and the second integer represents the year,  $Y$  ( $0000 \leq Y \leq 0030$ ). The year will always have 4 digits.
- The strike date will never precede the infection date.

### Output

Output the EIT for each zone on its own line. The EIT must be rounded to the fourth digit after the decimal point. The ones-digit must always be printed even if it is a zero.

**Sample Input**

```
2
2 0009
11 0012
3 0010
10 0010
```

**Sample Output**

```
3.3333
0.3500
```