Project Euler #19: Counting Sundays

This problem is a programming version of Problem 19 from projecteuler.net

You are given the following information, but you may prefer to do some research for yourself.

1 Jan 1900 was a Monday.
Thirty days has September,
April, June and November.
All the rest have thirty-one,
Saving February alone,
Which has twenty-eight, rain or shine.
And on leap years, twenty-nine.

A leap year occurs on any year evenly divisible by 4, but not on a century unless it is divisible by 400.

How many Sundays fell on the first of the month between two dates(both inclusive)?

Input Format

The first line contains an integer T, i.e., number of test cases.
Each testcase will contain two lines
$Y_1\ M_1\ D_1$ on first line denoting starting date.
$Y_2\ M_2\ D_2$ on second line denoting ending date.

Constraints

- $1 \leqslant T \leqslant 100$

- $1900 \leqslant Y_1 \leqslant 10^{16}$

- $Y_1 \leqslant Y_2 \leqslant (Y_1 + 1000)$

- $1 \leqslant M_1, M_2 \leqslant 12$

- $1 \leqslant D_1, D_2 \leqslant 31$

Output Format

Print the values corresponding to each test case.

Sample Input

```
2
1900 1 1
1910 1 1
2000 1 1
2020 1 1
```

Sample Output

```
18
35
```

Explanation

For testcase 1, we have the following sundays :-

1 April 1900
1 July 1900
1 September 1901
1 December 1901
1 June 1902
1 February 1903
1 March 1903
1 November 1903
1 May 1904
1 January 1905
1 October 1905
1 April 1906
1 July 1906
1 September 1907
1 December 1907
1 March 1908
1 November 1908
1 August 1909