#include <stdio.h>

int main ()

{

int y, d;

int n;

int month, day;

int leap\_year;

int days;

scanf ( "%d%d", &y, &d );

scanf ( "%d", &n );

// leap year or not

leap\_year = y % 400 == 0 || ( y % 100 && y % 4 == 0 );

// calculate each input line

for ( int i = 0; i < n; i++ ) {

if ( i ) printf ( " " );

days = d;

scanf ( "%d%d", &month, &day );

if ( month < 1 || month > 12 ) {

printf ( "-1" );

continue;

}

if ( day < 1 ) {

printf ( "-2" );

continue;

}

else {

switch ( month ) {

case 2:

if ( ( leap\_year && day > 29 ) ||

( !leap\_year && day > 28 ) ) {

printf ( "-2" );

continue;

}

break;

case 4: case 6: case 9: case 11:

if ( day > 30 ) {

printf ( "-2" );

continue;

}

break;

default:

if ( day > 31 ) {

printf ( "-2" );

continue;

}

}

}

for ( int m = 1; m < month; m++ ) {

switch ( m ) {

case 2:

if ( leap\_year ) days += 29;

else days += 28;

break;

case 4: case 6: case 9: case 11:

days += 30;

break;

default:

days += 31;

}

}

days += ( day - 1 );

printf ( "%d", days % 7 );

}

return 0;

}