

# Easiest Loop 1

Ileana D'Cruz is taking programming classes but she is having problem in understanding **while loops**. She is working on following set of instructions -

```
INTEGER I = 0, S, U = 1010;
```

```
WHILE (I < U) {  
S = (3 * S) + (5 * I);  
I = I + 1;  
}
```

Let  $S_k$  be the value assigned to INTEGER  $S$  for the iteration  $I = (k + 1)$  and  $n, m, p$  be positive integers such that  $m > n$ . Ileana knows the values of  $n$  and  $m$  but she forgot the initial value of  $S$ . She is trying to find the unit digit of  $p$ . Any initial value of  $S$  may be used. She also knows the following equality -

$$(2 * n + 3) * (p - 1) + (4 / 5) * [(p * S_n) - S_m] = 2 * (m - n)$$

## Input

First line of input is  $T$ (total no. of test cases). Each of next  $T$  lines contains two integers  $n$  and  $m$ .

## Output

Print **unit digit of  $p$**  ( $p \% 10$ ) for each test case in separated lines.

## Example

**Input:**

```
1  
2 3
```

**Output:**

```
3
```

## Constraints

$T < 10001$

## Explanation

Let  $S = 2$

$S_0 = 6$

$S_1 = 23$

$S_2 = 79$

$S_3 = 252$

Now solving the equation gives  $p = 3$ .