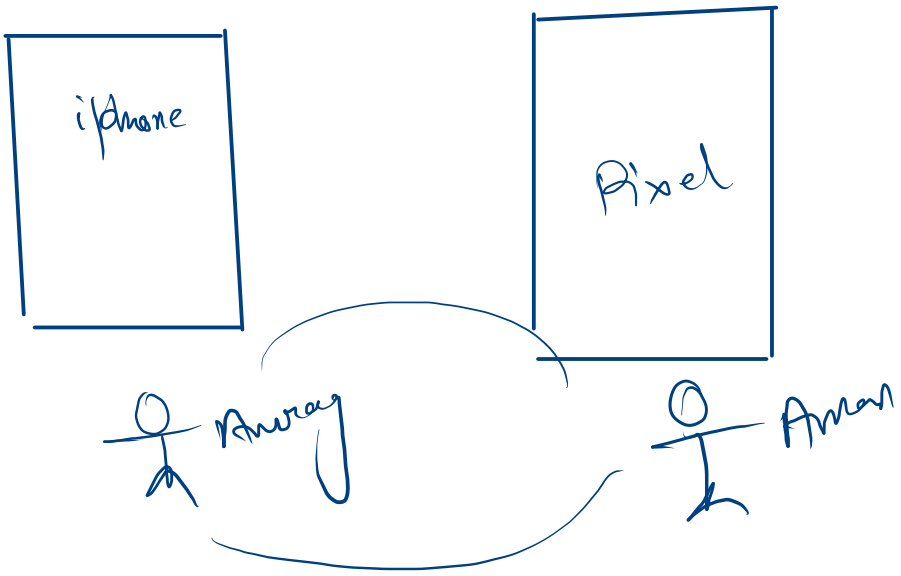
Swap.



a = 10 20

b = 20 10

Swap.

$x = 10$ (20)

$y = 20$ (10)

Logic:

$x = x + y$

$y = x - y$

$x = x - y$

eg

$x = 30$

$y = 30 - 20 = 10$

$x = 30 - 10 = 20$

Swap using 3rd

$x = 10$ → 20

$y = 20$ → 10

$C = 10$

```
int c = x ;
x = y ;
y = c ;
```

Sample Input 0

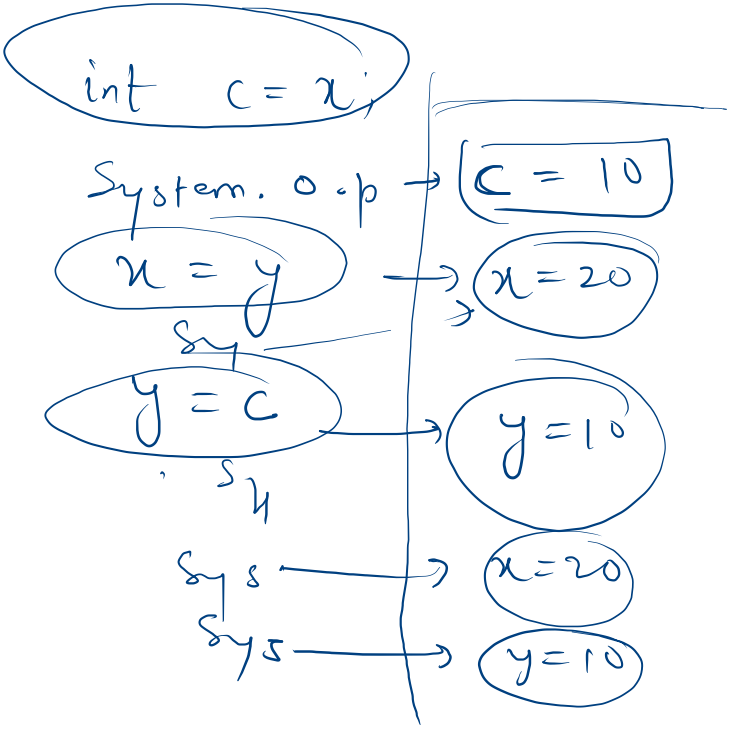
```
10
20
```

Sample Output 0

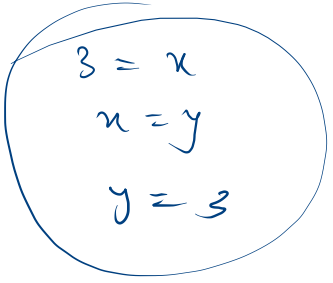
```
c = 10
x = 20
y = 10
x = 20
y = 10
```

$x = 10\ 20$

$y = 20$



$c = 10$



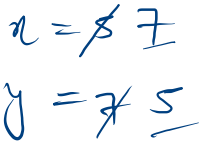
```java
import java.io.*;
import java.util.*;

public class Solution {

    public static void main(String[] args) {
        Scanner scn = new Scanner(System.in);
        int x = scn.nextInt();
        int y = scn.nextInt();

        int c = x;
        x = y;
        y = c;
        System.out.println("c = " + c);
        System.out.println("x = " + x);
        System.out.println("y = " + y);
        System.out.println("x = " + x);
        System.out.println("y = " + y);

    }
}
```



Swap → 3 numbers.

Que?

x	y	z
3	5	7
7	3	5

$x = 15 - 7$

$y = 15 - 5 - 7 = 3$

$z = 15 - 3 - 7$

$z = 5$

$x = 15 - 3 - 5 = 7$

$x = x + y + z$

$y = x - y - z$

$z = x - y - z$

$x = x - y - z$

```java
import java.io.*;
import java.util.*;

public class Solution {

    public static void main(String[] args) {
        Scanner scn = new Scanner(System.in);
        int x = scn.nextInt();
        int y = scn.nextInt();
        int z = scn.nextInt();

        x = x + y + z;
        y = x - y - z;
        z = x - y - z;
        x = x - y - z;

        System.out.println(x);
        System.out.println(y);
        System.out.println(z);


    }
}
```

x = ~~10~~ ~~60~~ 30
y = 20 10
~~z = 30~~ 20

x =

y = 60 - 20 - 30

z = 60 - 10 - 30

x = 60 - 10 - 20

$m = x$

$x = y$

$y = z$

$z = m$

$x = \cancel{10}\ 20$

$y = 20$

$z = 30$

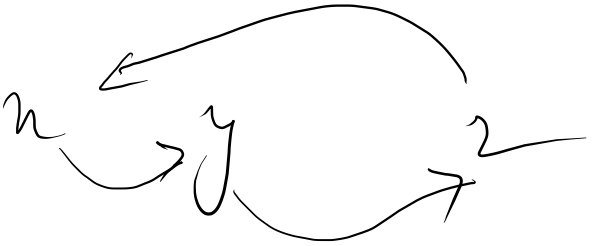
$m = 10$

$m = 2$

$z = y$

$y = x$

$x = m$



$m = z$ 10 20 30

$z = y$

$y = x$ ex ⟶ 30 10 20

$x = m$ ac ⟶ 20 30 10

$m = x$

$x = y$

$y = z$

$z = m$

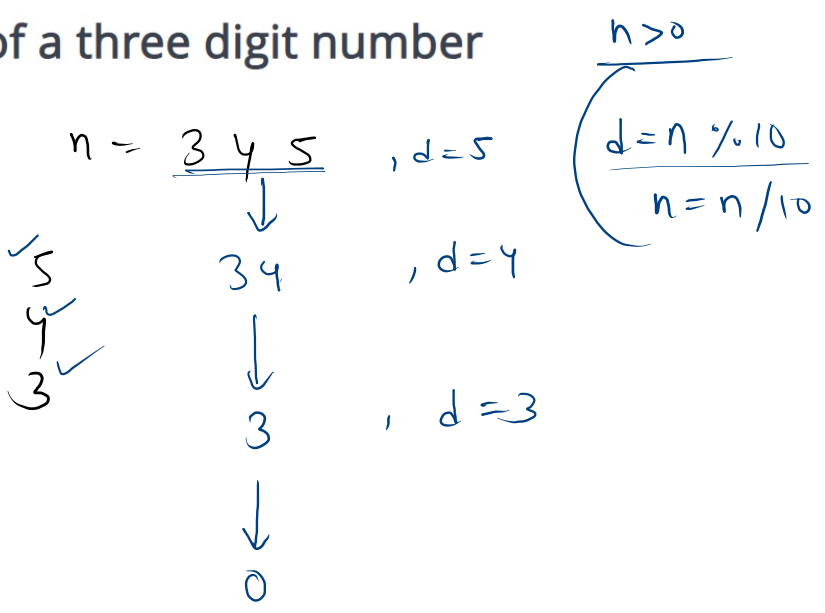
Print digit by digit of a three digit number

Sample Input 0

```
345
```

Sample Output 0

```
5
4
3
```



```java
import java.io.*;
import java.util.*;

public class Solution {
    public static void printDigits(int n){
        while(n > 0){
            int d = n % 10;
            System.out.println(d);
            n = n / 10;
        }
    }

    public static void main(String[] args) {
        Scanner scn = new Scanner(System.in);
        int n = scn.nextInt();
        printDigits(n);
    }
}
```

```java
import java.io.*;
import java.util.*;

public class Solution {

    public static int getLastDigit(int n){
        return n % 10;
    }

    public static void printDigits(int n){
        while(n > 0){
            int d = getLastDigit(n);
            System.out.println(d);
            n = n / 10;
        }
    }


    public static void main(String[] args) {
        Scanner scn = new Scanner(System.in);
        int n = scn.nextInt();
        printDigits(n);
    }
}
```

n = 345

```java
import java.io.*;
import java.util.*;

public class Solution {

    public static int getLastDigit(int n){
        return n % 10;
    }

    public static void printDigits(int n){
        while(n > 0){
            int d = getLastDigit(n);
            System.out.println(d);
            n = n / 10;
        }
    }


    public static void main(String[] args) {
        Scanner scn = new Scanner(System.in);
        int n = scn.nextInt();
        printDigits(n);
    }
}
```

345 > 0

34 > 0

3 > 0

0 > 0

d = 3

5

4

3

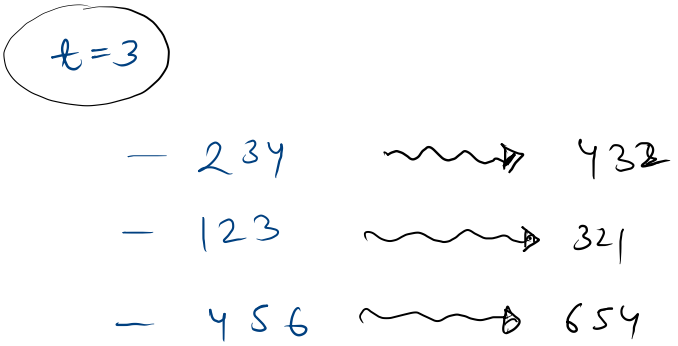
Reverse a 3 digit number

Sample Input 0

```
3
234
123
456
```

Sample Output 0

```
432
321
654
```



↳ Reverse n digit.

$x = 0 \; 4 \; 43 \; 432$

eg. n = 234

$d = n \% 10$

$d = 4$

400
30
2

23

2

$d = n \% 10$

$d = 3$

0

4 $\quad x = 4 \times 10 \times 10$

$x = 43$

$d = n \% 10$

$d = 2$

↳ 432.

$x = x * 10 + d$

x y ⇒ xy

2 3 ⇒ 20 + 3 = 23

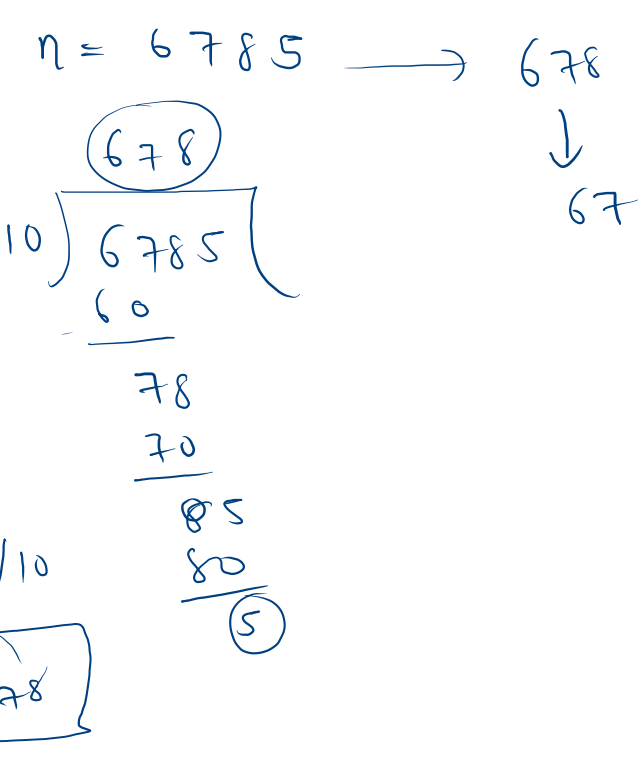
43×10 ↓↓ 430


```java
import java.io.*;
import java.util.*;

public class Solution {


    public static int reverse(int n){
        int x = 0;
        while(n > 0){
            int d = n % 10;
            x = x*10 + d;
            n = n / 10;
        }
        return x;
    }

    public static void main(String[] args) {
        Scanner scn = new Scanner(System.in);
        int t = scn.nextInt();
        for(int i = 1; i <= t; i++){
            int n = scn.nextInt();
            int ans = reverse(n);
            System.out.println(ans);
        }
    }
}
```

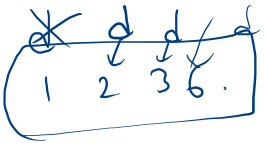


Print the final number xyzw...

Sample Input 0

```
4
1
2
3
6
```

4 more digits



One thousand two - - - -

$x = 0 \times 10 + 1 = 1$

$x = 1 \times 10 + 2 = 12$

$x = 12 \times 10 + 3 = 123$

$x = x * 10 + d$

$120 + 3$

1230

+ 6

1236

Sample Output 0

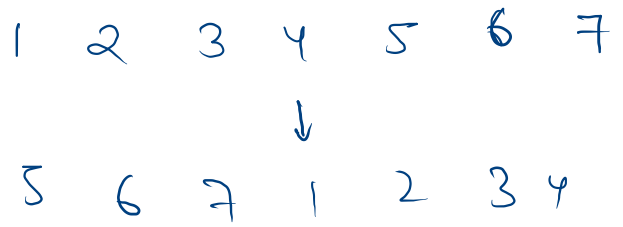
```
1236
```

```java
import java.io.*;
import java.util.*;

public class Solution {

    public static void main(String[] args) {
        Scanner scn = new Scanner(System.in);
        int t = scn.nextInt();
        int x = 0;
        for(int i = 1 ; i <= t; i++){
            int d = scn.nextInt();
            x = x*10 + d;
        }
        System.out.println(x);
    }
}
```

Rotate 7-digit number to right by three

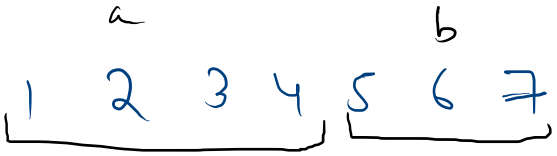


Sample Input 0

```
3
2345678
1234567
9876543
```

Sample Output 0

```
6782345
5671234
5439876
```



5671234

```java
import java.io.*;
import java.util.*;

public class Solution {
    public static int rotateBy3(int n){
        int a = n / 1000;
        int b = n % 1000;

        int ans = b * 10000 + a;
        return ans;
    }
    public static void main(String[] args) {
        /* Enter your code here. Read input from
    }
}
```

$a = n / 1000$

$b = n \% 1000$

$ans = b \times 10000 + a$