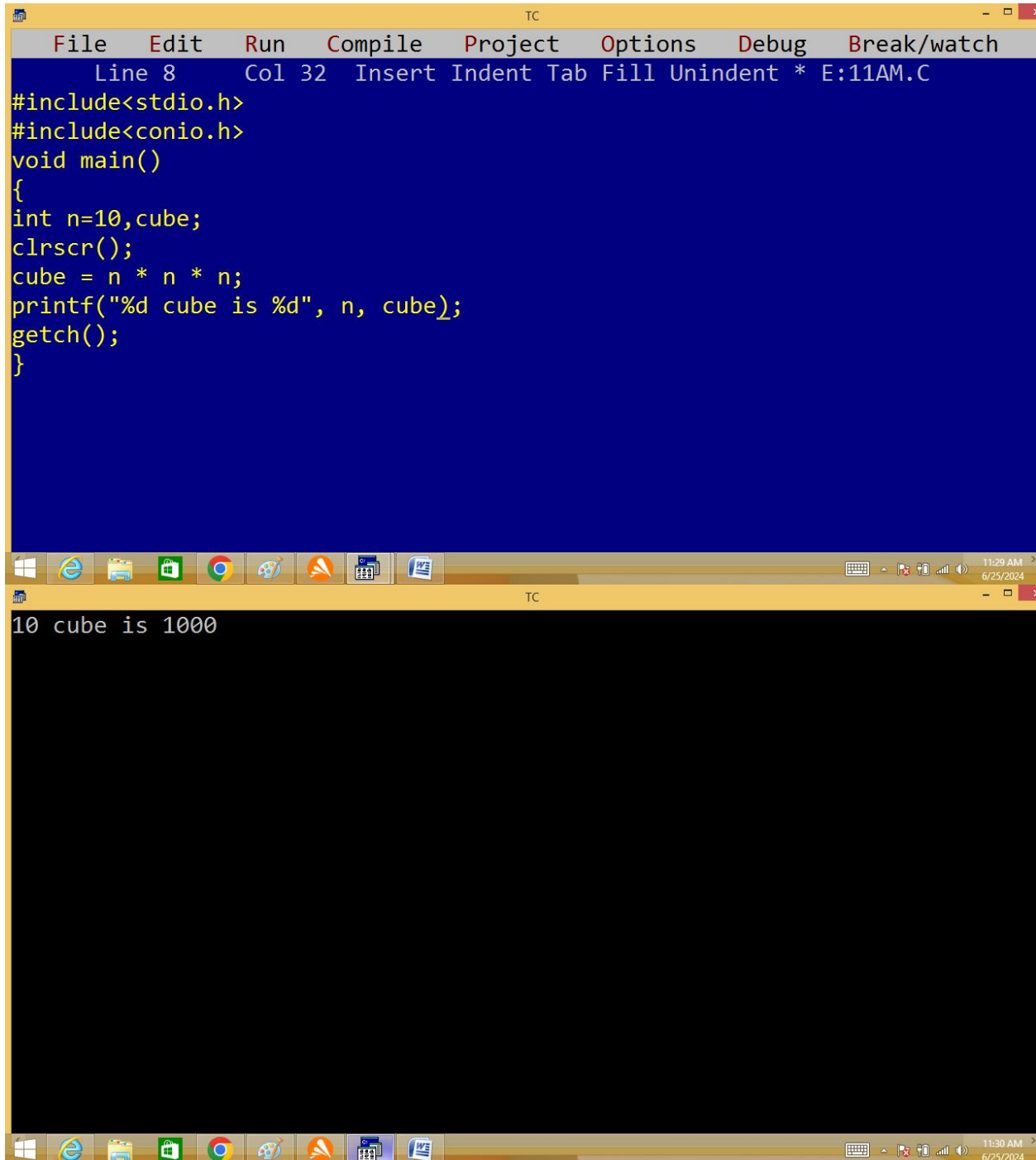


Finding cube value:

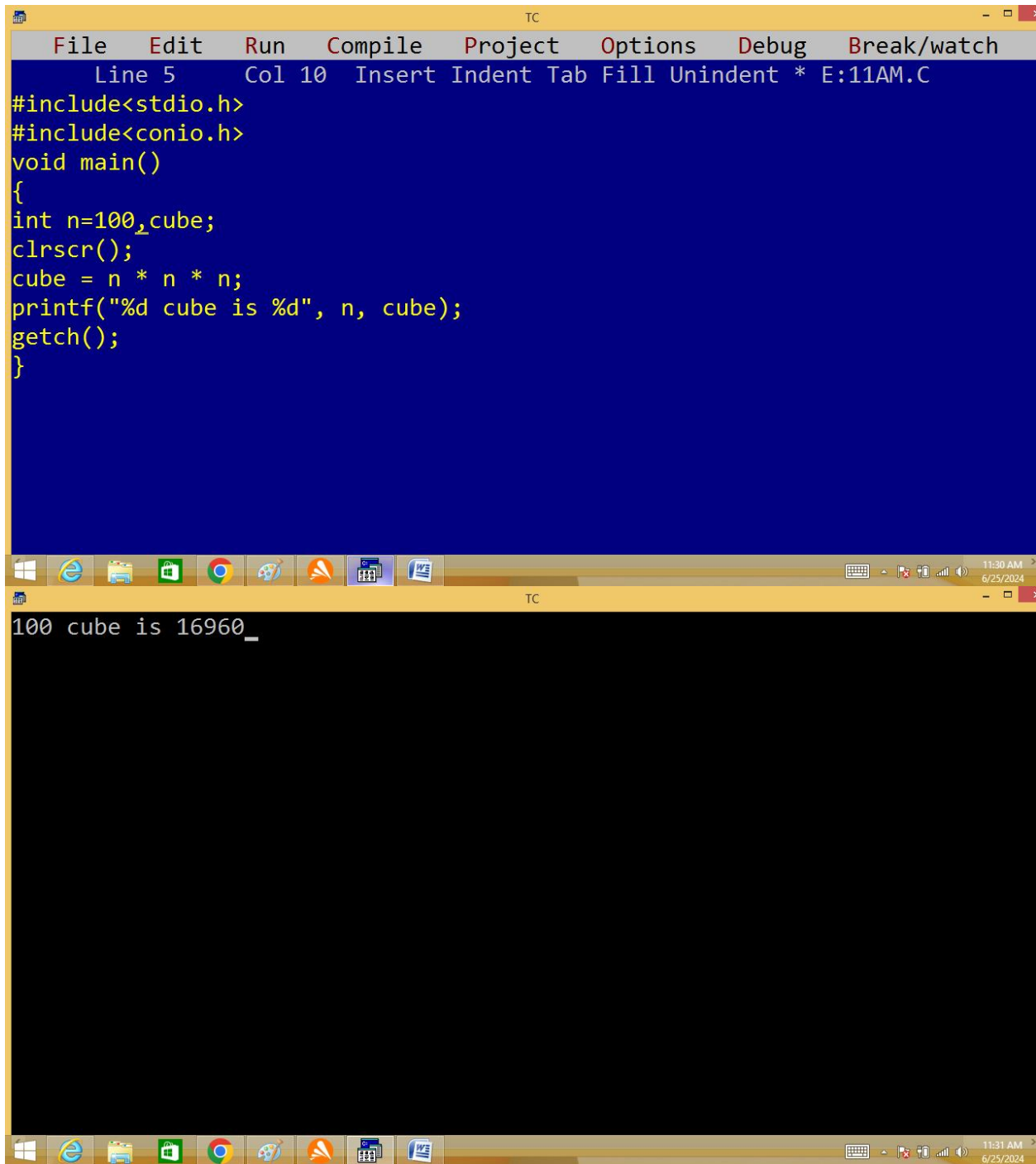
$$n^3 = n * n * n$$



The image shows two screenshots of the Turbo C++ (TC) IDE. The top screenshot displays the source code for a program that calculates the cube of a number. The code is as follows:

```
File Edit Run Compile Project Options Debug Break/watch
Line 8 Col 32 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n=10,cube;
clrscr();
cube = n * n * n;
printf("%d cube is %d", n, cube);
getch();
}
```

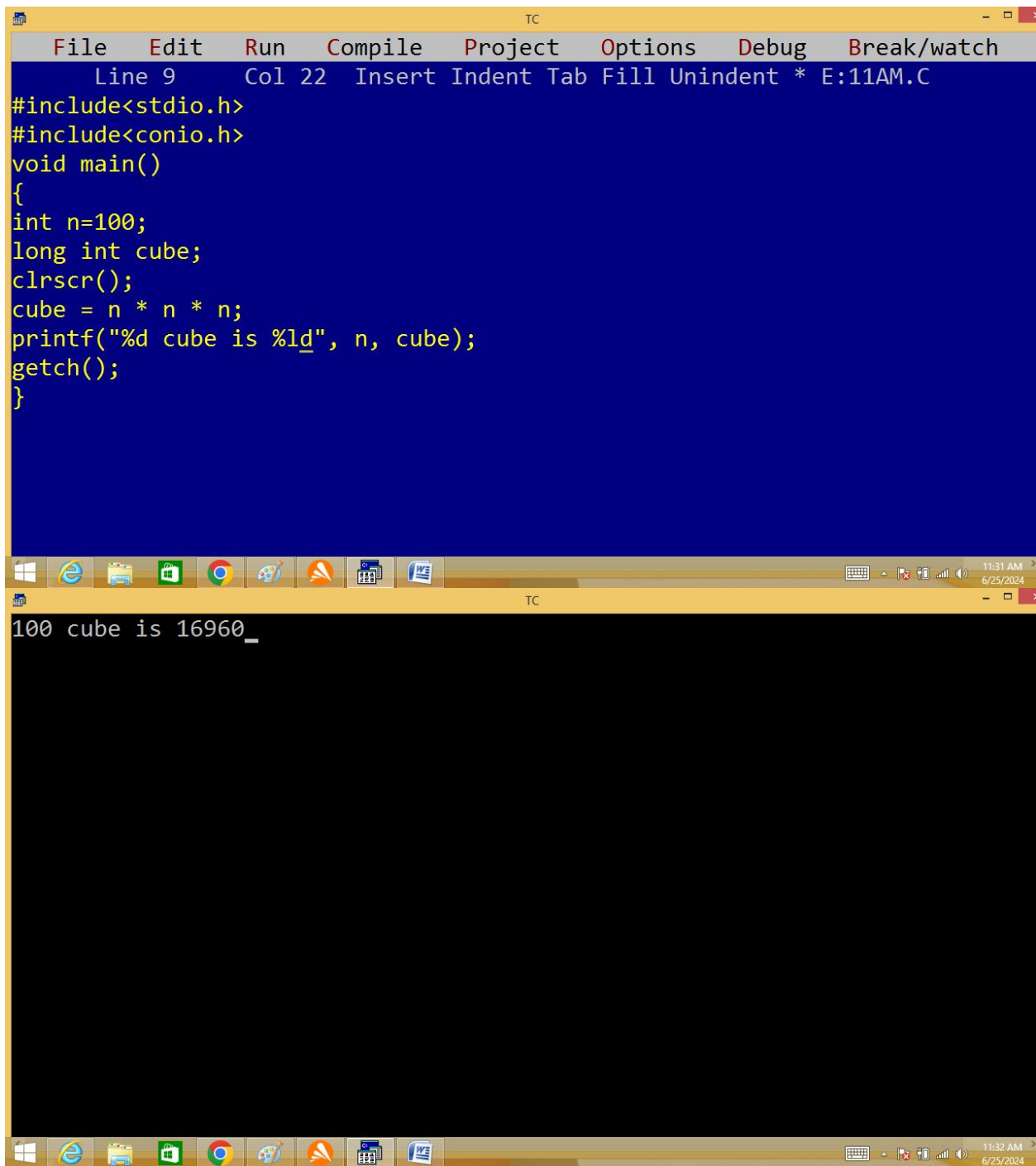
The bottom screenshot shows the output of the program, which is "10 cube is 1000". The TC window title is "TC". The Windows taskbar at the bottom shows the time as 11:29 AM and the date as 6/25/2024.



The image shows a screenshot of the Turbo C++ (TC) IDE. The top window is the editor, which has a blue background and a menu bar with options: File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the bottom of the editor shows 'Line 5', 'Col 10', and 'Insert Indent Tab Fill Unindent * E:11AM.C'. The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
int n=100,cube;
clrscr();
cube = n * n * n;
printf("%d cube is %d", n, cube);
getch();
}
```

The bottom window is the output console, which has a black background. It displays the output of the program: '100 cube is 16960_'. The Windows taskbar is visible at the bottom of the screen, showing various application icons and the system clock indicating 11:30 AM on 6/25/2024.



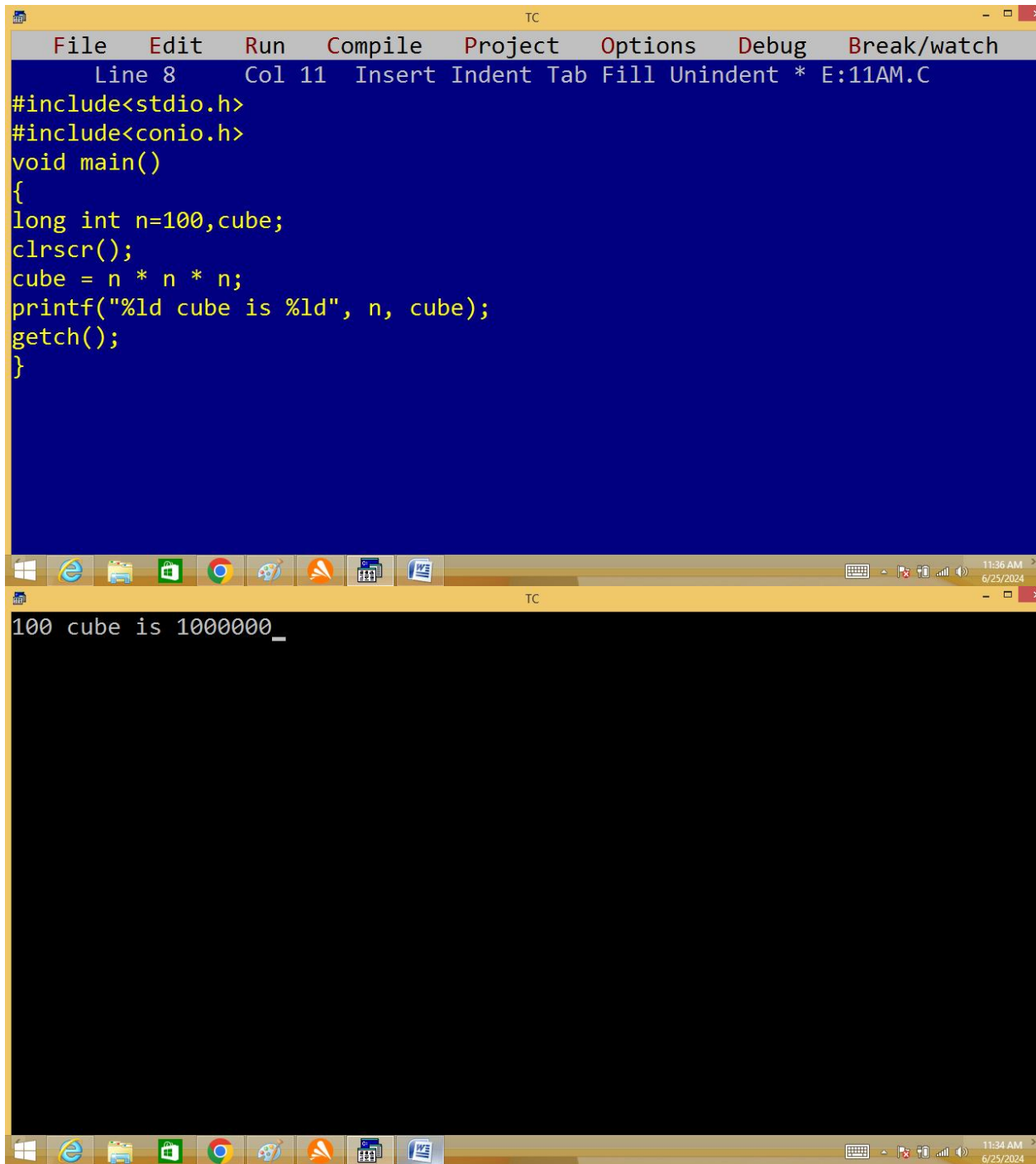
The image shows a screenshot of the Turbo C++ (TC) IDE. The top window is the editor, displaying a C program. The menu bar includes File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the bottom of the editor shows 'Line 9', 'Col 22', and 'Insert Indent Tab Fill Unindent * E:11AM.C'. The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
int n=100;
long int cube;
clrscr();
cube = n * n * n;
printf("%d cube is %ld", n, cube);
getch();
}
```

The bottom window is the output console, which shows the result of the program's execution: '100 cube is 16960_'. The Windows taskbar at the bottom of the screen shows the time as 11:31 AM and 11:32 AM on 6/25/2024.

```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 8 Col 52 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n=100;
long int cube;
clrscr();
cube = (long)n * n * n; /* explicit type casting */
printf("%d cube is %ld", n, cube);
getch();
}

TC
100 cube is 1000000_
TC
```



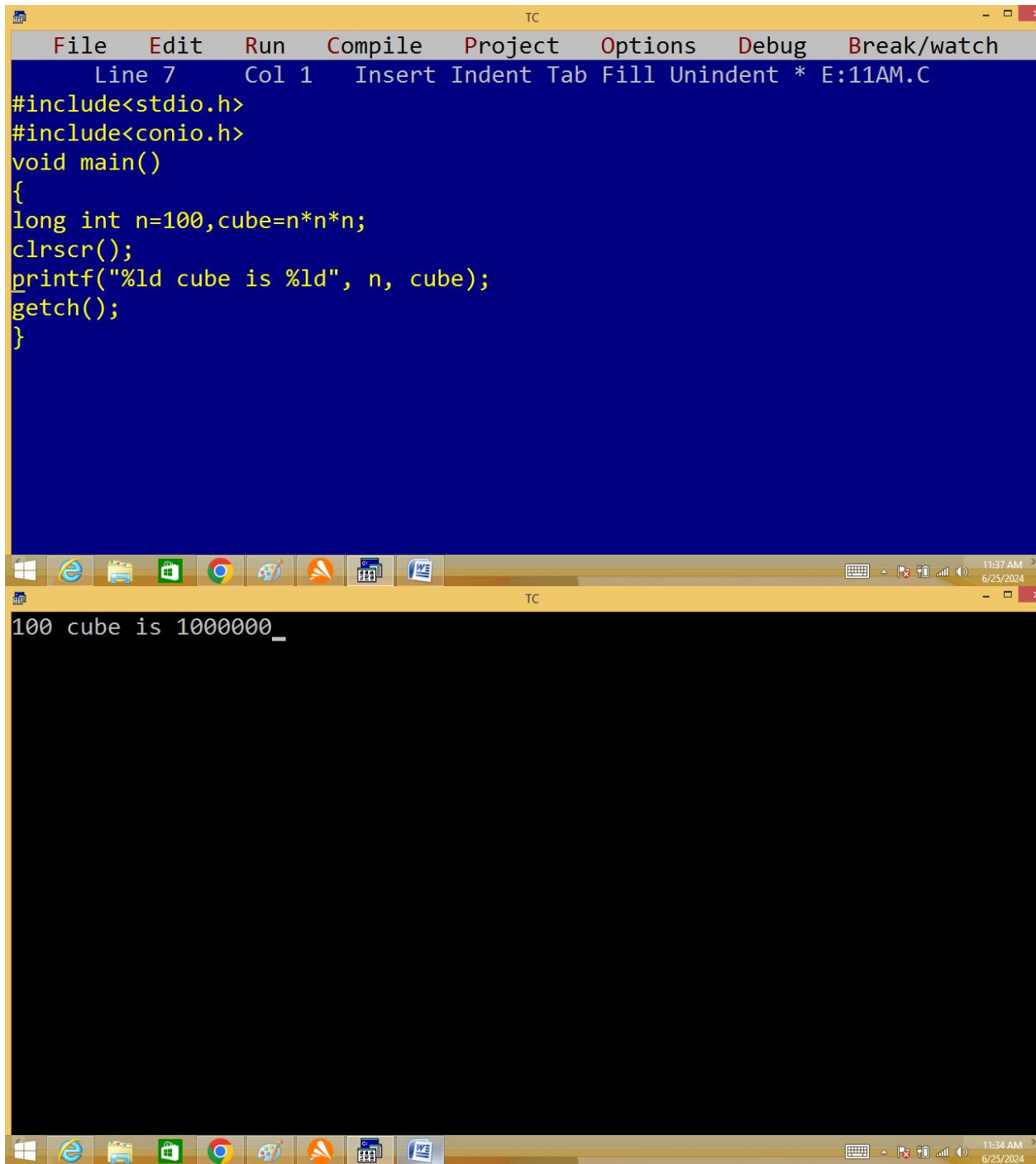
The image shows a screenshot of the Turbo C++ (TC) IDE. The top window displays a C program with the following code:

```
File Edit Run Compile Project Options Debug Break/watch
Line 8 Col 11 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
long int n=100,cube;
clrscr();
cube = n * n * n;
printf("%ld cube is %ld", n, cube);
getch();
}
```

The bottom window shows the output of the program:

```
100 cube is 1000000_
```

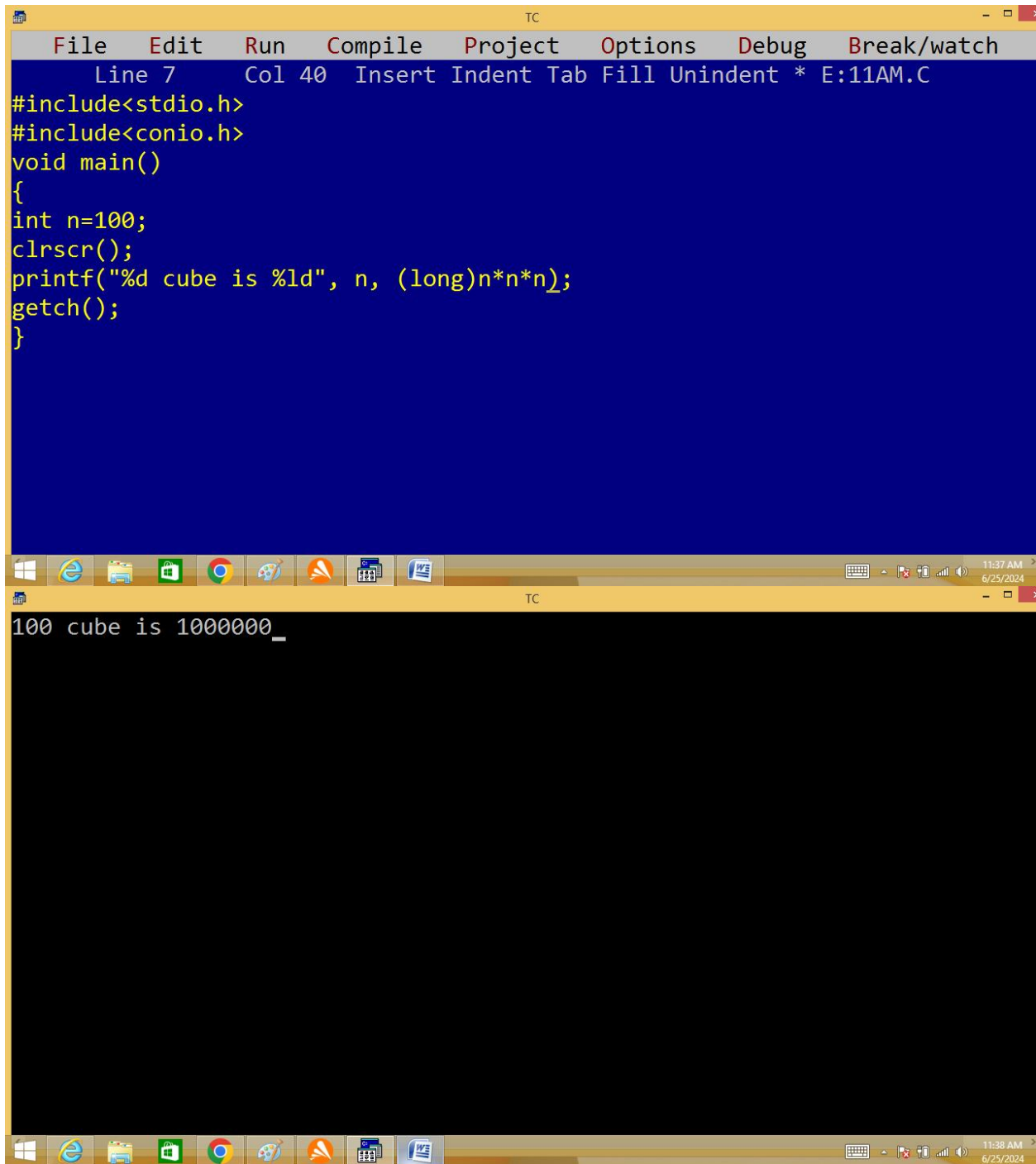
The Windows taskbar at the bottom of the screen shows the time as 11:36 AM on 6/25/2024. The system tray includes icons for keyboard, mouse, network, and volume.



The image shows a screenshot of the Turbo C++ (TC) IDE. The top window is the source code editor, which has a blue background and a yellow title bar labeled 'TC'. The menu bar includes File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the bottom of the editor shows 'Line 7 Col 1 Insert Indent Tab Fill Unindent * E:11AM.C'. The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
long int n=100,cube=n*n*n;
clrscr();
printf("%ld cube is %ld", n, cube);
getch();
}
```

The bottom window is the output console, which has a black background and a yellow title bar labeled 'TC'. It displays the output of the program: '100 cube is 1000000_'. The Windows taskbar is visible at the bottom of the screen, showing various application icons and the system clock indicating 11:37 AM on 6/25/2024.



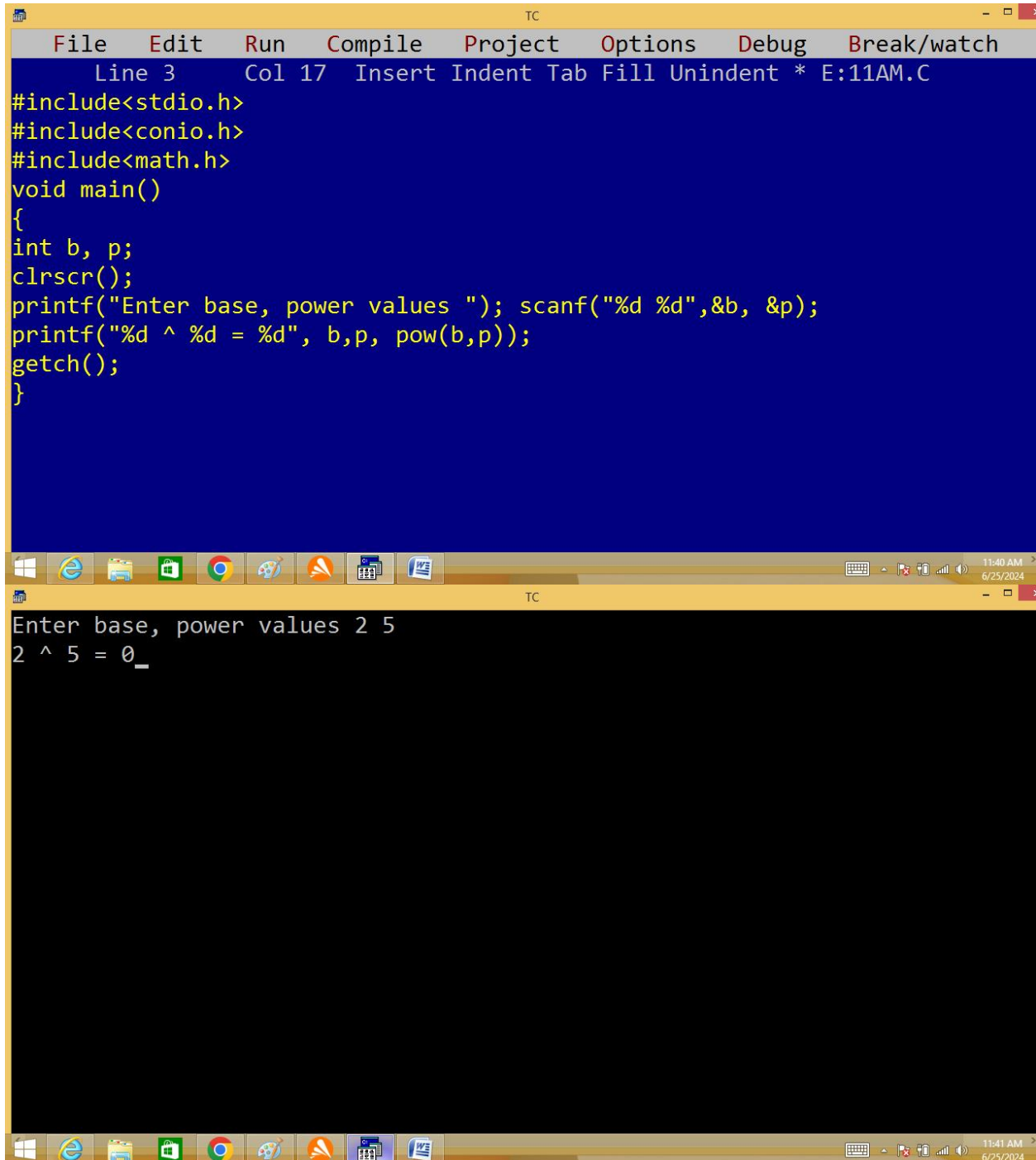
The image shows two screenshots of the Turbo C++ (TC) IDE. The top screenshot displays the source code of a C program in a blue editor window. The code calculates the cube of the number 100. The bottom screenshot shows the same IDE with the program's output in a black window, displaying '100 cube is 1000000_'. The Windows taskbar at the bottom of both screenshots includes icons for the Start menu, Internet Explorer, File Explorer, Microsoft Word, Google Chrome, Paint, VLC media player, a calculator, and Notepad. The system clock in the bottom right corner indicates the time is 11:37 AM and 11:38 AM on 6/25/2024.

```
File Edit Run Compile Project Options Debug Break/watch
Line 7 Col 40 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int n=100;
clrscr();
printf("%d cube is %ld", n, (long)n*n*n);
getch();
}
```

100 cube is 1000000_

Finding power value:

$$2^5 = 32$$



The image shows two screenshots of the Turbo C++ (TC) IDE. The top screenshot displays the source code of a C program designed to calculate the power of a given base and exponent. The code includes headers for standard input/output, console I/O, and the math library. It defines a main function that prompts the user to enter base and power values, reads them using scanf, and then prints the result using printf with the pow function. The bottom screenshot shows the program's execution. The user has entered '2' for the base and '5' for the power. The output shows '2 ^ 5 = 0_', which is an incorrect result, likely due to a bug in the program's logic or a display issue.

```
File Edit Run Compile Project Options Debug Break/watch
Line 3 Col 17 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
int b, p;
clrscr();
printf("Enter base, power values "); scanf("%d %d",&b, &p);
printf("%d ^ %d = %d", b,p, pow(b,p));
getch();
}
```

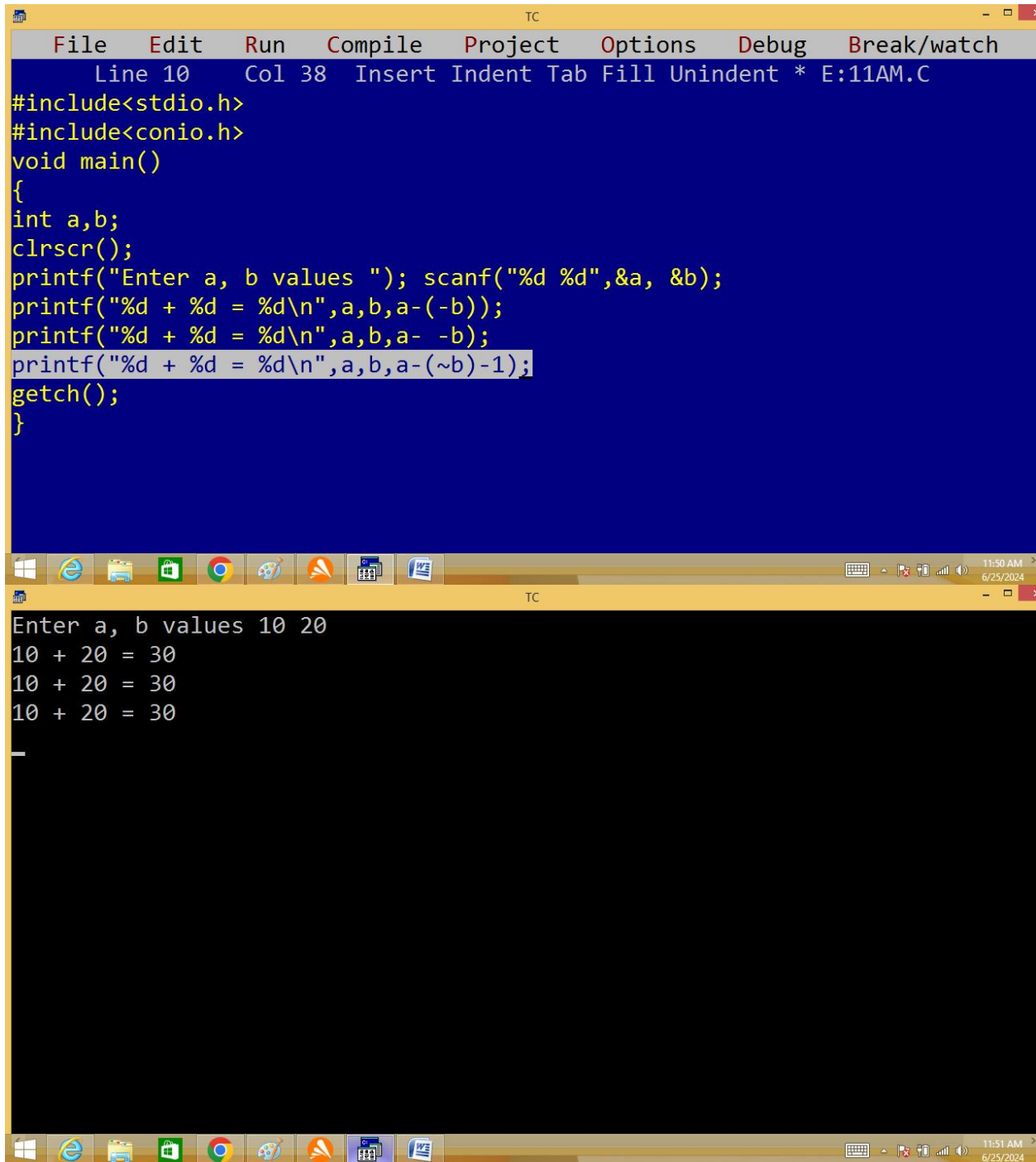
Enter base, power values 2 5
2 ^ 5 = 0_

The image shows a screenshot of the Turbo C++ (TC) IDE. The top window displays the source code of a C program. The code includes headers for `stdio.h`, `conio.h`, and `math.h`. The `main` function prompts the user to enter base and power values, reads them using `scanf`, and then prints the result using three different `printf` format specifiers: `%f`, `%.0f`, and `%d`. The line `printf("%d ^ %d = %d", b,p, (int)pow(b,p)); /* explicit type casting */` is highlighted. The bottom window shows the program's execution output for the input values 2 and 5, demonstrating the differences in output formatting between the three specifiers. The Windows taskbar at the bottom shows the date as 6/25/2024 and the time as 11:46 AM.

```
File Edit Run Compile Project Options Debug Break/watch
Line 11 Col 72 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
int b, p;
clrscr();
printf("Enter base, power values "); scanf("%d %d",&b, &p);
printf("%d ^ %d = %f\n", b,p, pow(b,p));
printf("%d ^ %d = %.0f\n", b,p, pow(b,p));
printf("%d ^ %d = %d", b,p, (int)pow(b,p)); /* explicit type casting */
getch();
}
```

Enter base, power values 2 5
2 ^ 5 = 32.000000
2 ^ 5 = 32
2 ^ 5 = 32

Add two numbers without using +:



```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 10 Col 38 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b;
clrscr();
printf("Enter a, b values "); scanf("%d %d",&a, &b);
printf("%d + %d = %d\n",a,b,a-(-b));
printf("%d + %d = %d\n",a,b,a- -b);
printf("%d + %d = %d\n",a,b,a-(~b)-1);
getch();
}
```

Enter a, b values 10 20
10 + 20 = 30
10 + 20 = 30
10 + 20 = 30

$a - (\sim b) - 1$

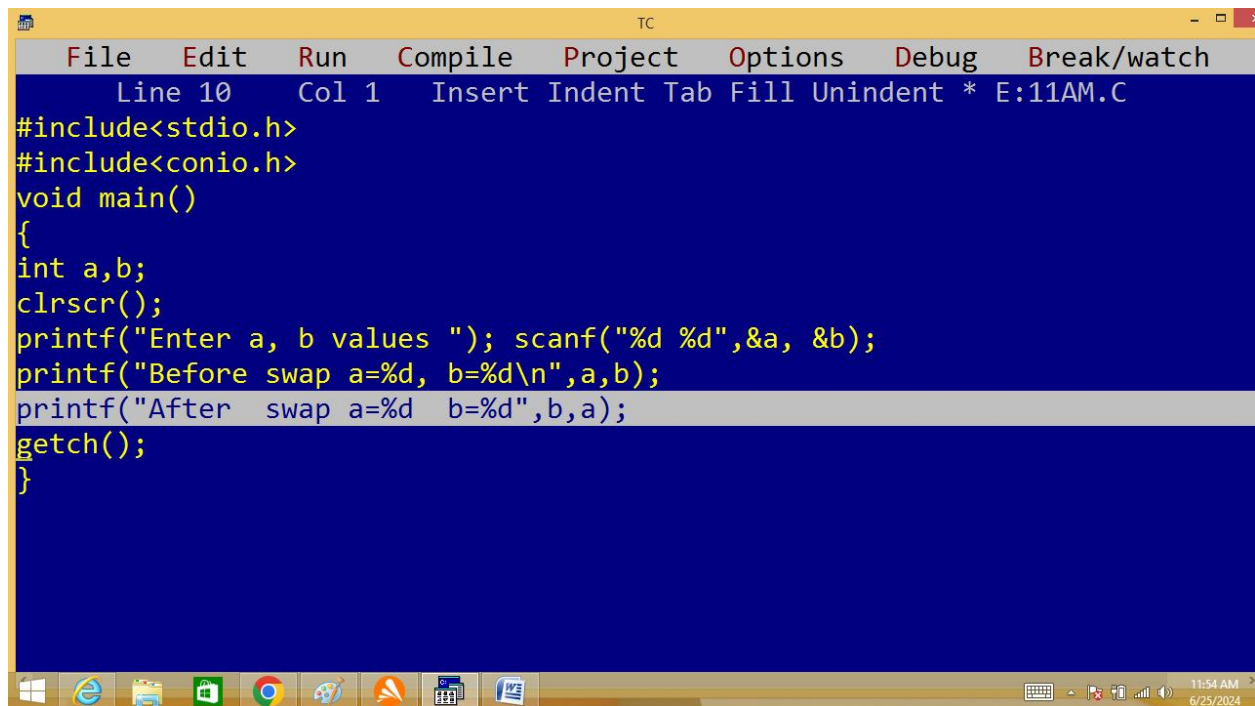
$10 - (\sim 20) - 1$

$10 - (-21) - 1$

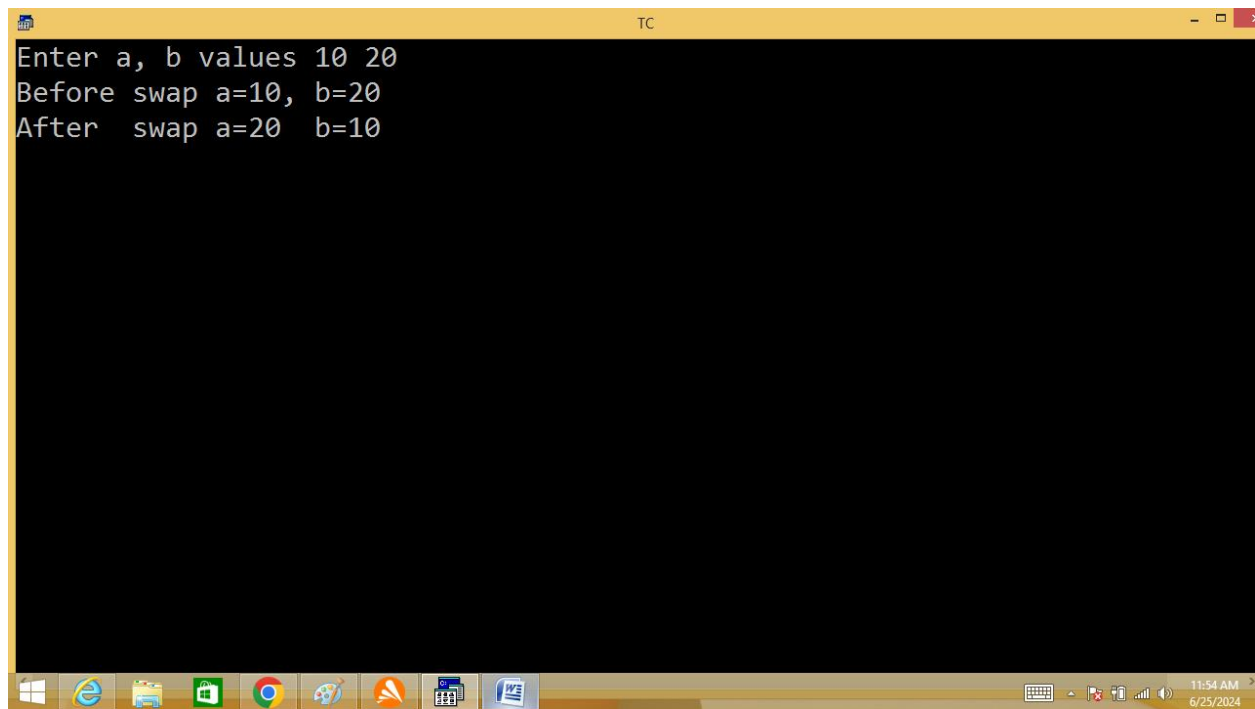
$10 + 21 - 1$

$31 - 1 = 30$

Swap two numbers without using operators:



```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 10 Col 1 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b;
clrscr();
printf("Enter a, b values "); scanf("%d %d",&a, &b);
printf("Before swap a=%d, b=%d\n",a,b);
printf("After swap a=%d b=%d",b,a);
getch();
}
```



The image shows a screenshot of a Turbo C++ (TC) window. The window has a yellow title bar with the text "TC" in the center. The main area is black with white text. The text displayed is:

```
Enter a, b values 10 20  
Before swap a=10, b=20  
After swap a=20 b=10
```

At the bottom of the window is a Windows taskbar with various icons including the Start button, Internet Explorer, File Explorer, Microsoft Word, Google Chrome, and others. The system clock in the bottom right corner shows "11:54 AM" and "6/25/2024".

Using 3rd variable:

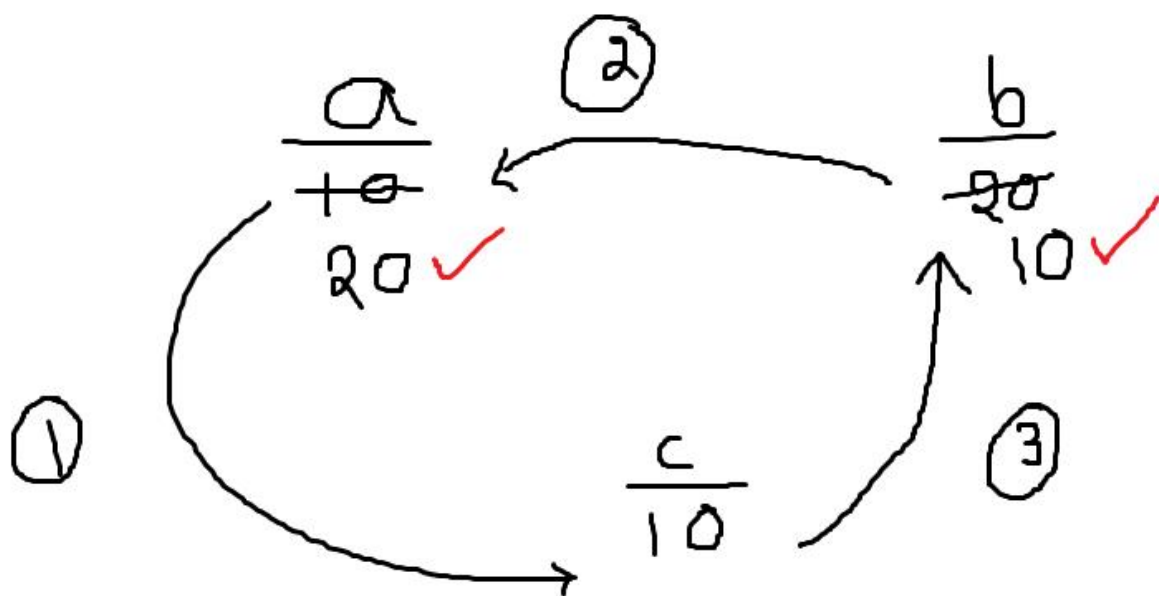
The image shows two screenshots of the Turbo C++ (TC) IDE. The top screenshot displays the source code for a program that swaps two numbers, a and b, using a temporary variable c. The code is as follows:

```
File Edit Run Compile Project Options Debug Break/watch
Line 10 Col 36 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b,c;
clrscr();
printf("Enter a, b values "); scanf("%d %d",&a, &b);
printf("Before swap a=%d, b=%d\n",a,b);
c=a; a=b; b=c;
printf("After swap a=%d b=%d",a,b);
getch();
}
```

The bottom screenshot shows the output of the program when executed. The user has entered the values 10 and 20 for a and b respectively. The output shows the values before and after the swap.

```
Enter a, b values 10 20
Before swap a=10, b=20
After swap a=20 b=10_
```

The IDE interface includes a menu bar with options like File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the bottom indicates the time as 12:00 PM on 6/25/2024.



Without using 3rd variable:

The image shows two screenshots of the Turbo C++ (TC) IDE. The top screenshot displays the source code of a program designed to swap two numbers using arithmetic operations. The code includes headers for `stdio.h` and `conio.h`, and defines a `main` function. It prompts the user to enter two values, `a` and `b`, and then performs a swap using the following sequence of operations: `a = a + b`, `b = a - b`, `a = a - b`, `a = a * b`, `b = a / b`, `a = a / b`, `a = a ^ b`, `b = a ^ b`, and `a = a ^ b`. The bottom screenshot shows the program's execution. It displays the input values `10` and `20`, the initial state (`Before swap a=10, b=20`), and the final state after the swap (`After swap a=20 b=10`).

```
File Edit Run Compile Project Options Debug Break/watch
Line 11 Col 21 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b;
clrscr();
printf("Enter a, b values "); scanf("%d %d",&a, &b);
printf("Before swap a=%d, b=%d\n",a,b);
/*a=a+b; b=a-b; a=a-b;
a=a*b; b=a/b; a=a/b; */
a=a^b; b=a^b; a=a^b;
printf("After swap a=%d b=%d",a,b);
getch();
}
```

Enter a, b values 10 20
Before swap a=10, b=20
After swap a=20 b=10_

$a=10 \implies 30 \implies 20$ ✓

$b=20 \implies 10$ ✓

$a=a+b \implies 10+20=30$

$b=a-b \implies 30-20=10$

$a=a-b \implies 30-10=20$

$a=10 \implies 200 \implies 20$ ✓

$b=20 \implies 10$ ✓

$a=a*b \implies 10*20=200$

$b=a/b \implies 200/20=10$

$a=a/b \implies 200/10=20$

$$\begin{array}{r}
 2 \overline{) 10} \\
 2 \overline{) 5-0} \\
 2 \overline{) 2-1} \\
 \hline
 1-0
 \end{array}$$

$$10 = 1010$$

$$\begin{array}{r}
 2 \overline{) 20} \\
 2 \overline{) 10-0} \\
 2 \overline{) 5-0} \\
 2 \overline{) 2-1} \\
 \hline
 1-0
 \end{array}$$

$$20 = 10100$$

$a = a^b$ ←
 $a = 10 = 01010$
 $b = 20 = \underline{10100}$
 $\quad \quad 11110 = 30$
 $\quad \quad \swarrow \quad \downarrow \quad \searrow$
 $2^4 + 2^3 + 2^2 + 2^1$
 $\quad \quad \swarrow \quad \downarrow \quad \searrow$
 $16 + 8 + 4 + 2 = 30$
 $a = 30, b = 20$

$b = a^b$ ←
 $a = 30 = 11110$
 $b = 20 = \underline{10100}$
 $\quad \quad 01010 = 10$
 $a = 30, b = 10$

$a = a^b$ ←
 $a = 30 = 11110$
 $b = 10 = \underline{01010}$
 $\quad \quad 10100 = 20$
 $a = 20, b = 10 \checkmark$

Read a baby age in no of days and find the baby age in years, months, weeks and days.

$$y = 500/365 = 1$$

$$m = 500 \% 365 = 135 / 30 = 4$$

$$w = 500 \% 365 = 135 \% 30 = 15 / 7 = 2$$

$$d = 500 \% 365 = 135 \% 30 = 15 \% 7 = 1$$

$$\begin{array}{r} \text{days} \\ 365 \overline{) 500} \quad (1 - y \checkmark \\ \underline{365} \\ 30 \overline{) 135} \quad (4 - m \checkmark \\ \underline{120} \\ 7 \overline{) 15} \quad (2 - w \checkmark \\ \underline{14} \\ 1 - d \checkmark \end{array}$$

The image shows a screenshot of the Turbo C++ (TC) IDE. The top window displays the source code for a C program named E:11AM.C. The code calculates the age of a baby in years, months, weeks, and days based on the number of days entered. The code is as follows:

```
Line 12 Col 1 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int tdays, y,m,w,d;
clrscr();
printf("Enter baby age in days "); scanf("%d",&tdays);
y = tdays/365;
m = tdays%365/30;
w = tdays%365%30/7;
d = tdays%365%30%7;
printf("Baby age %d year(s) %d month(s) %d week(s) and %d day(s)",y,m,w,d);
getch();
}
```

The bottom window shows the program's execution. It prompts the user to enter the baby's age in days, and the user has entered 500. The program then outputs the calculated age: 1 year(s), 4 month(s), 2 week(s), and 1 day(s).

Enter baby age in days 500
Baby age 1 year(s) 4 month(s) 2 week(s) and 1 day(s)

```
TC
Enter baby age in days 5000
Baby age 13 year(s) 8 month(s) 2 week(s) and 1 day(s)
```

```
TC
Enter baby age in days 30000
Baby age 82 year(s) 2 month(s) 1 week(s) and 3 day(s)
```

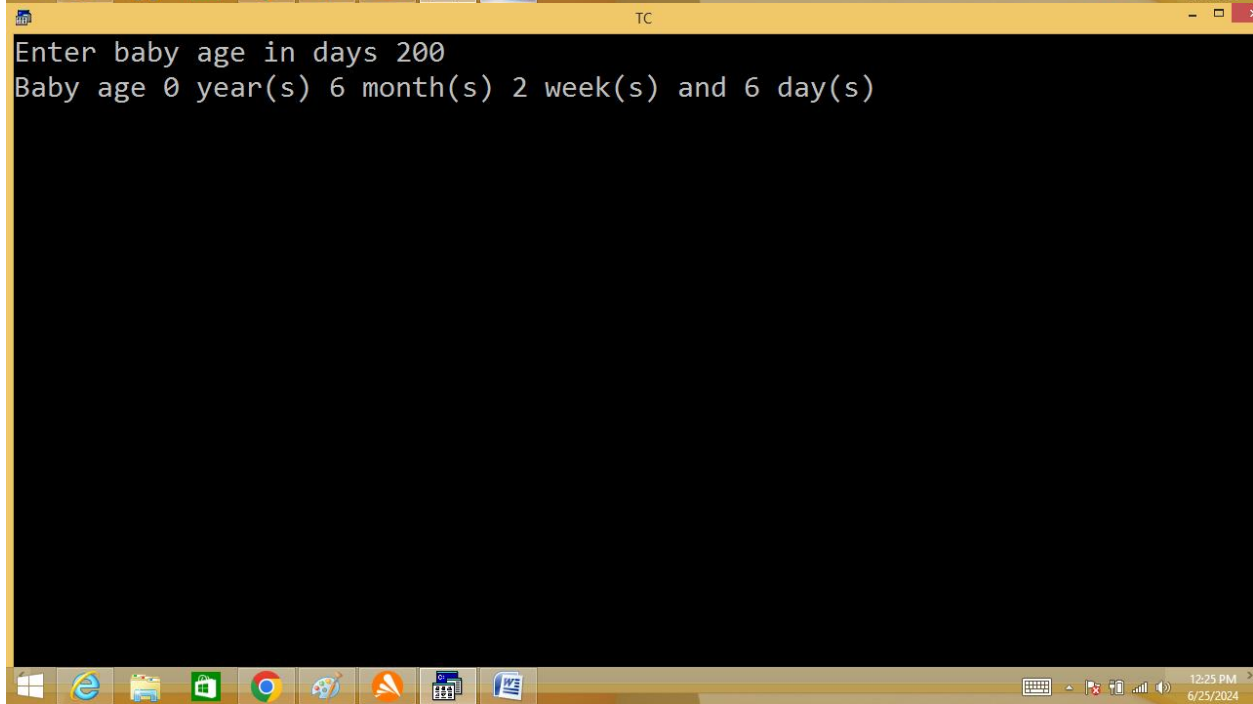
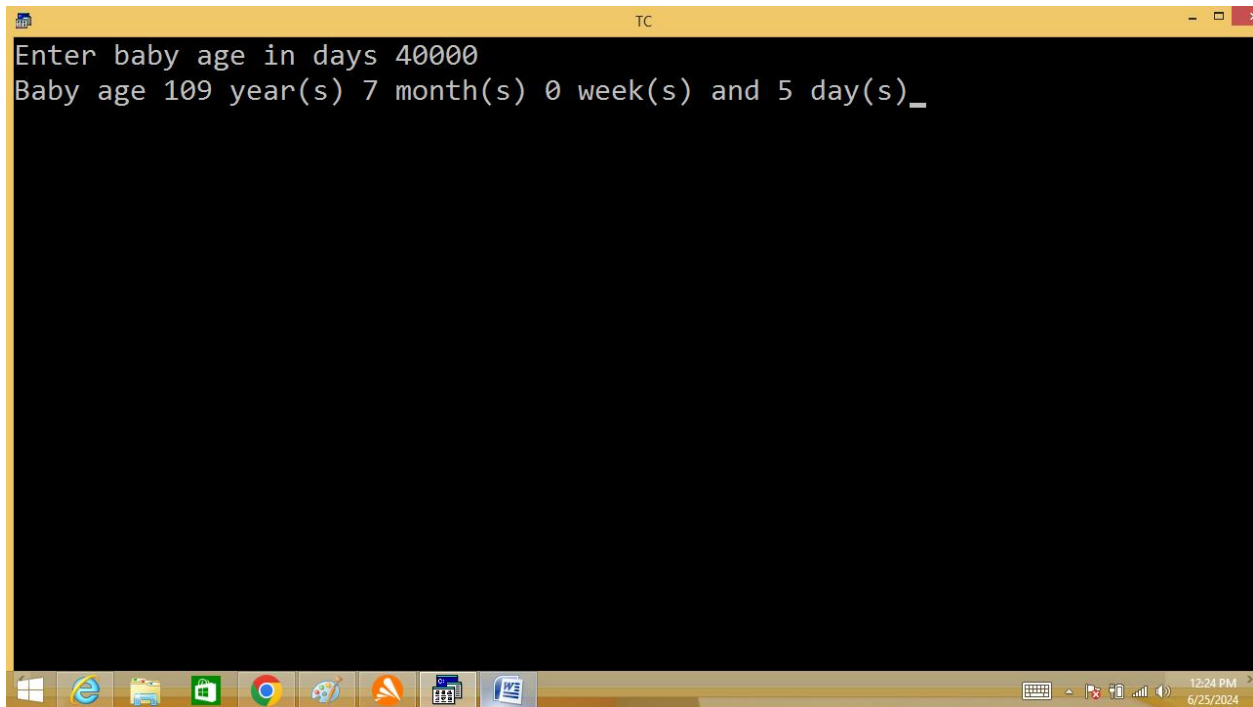
The image shows a screenshot of the Turbo C++ (TC) IDE. The top window displays the execution output, and the bottom window shows the source code of the program.

Execution Output (Top Window):

```
Enter baby age in days 40000
Baby age -69 year(s) -11 month(s) -3 week(s) and 0 day(s)
```

Source Code (Bottom Window):

```
File Edit Run Compile Project Options Debug Break/watch
Line 12 Col 61 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
    long tdays, y,m,w,d;
    clrscr();
    printf("Enter baby age in days "); scanf("%ld",&tdays);
    y = tdays/365;
    m = tdays%365/30;
    w = tdays%365%30/7;
    d = tdays%365%30%7;
    printf("Baby age %ld year(s) %ld month(s) %ld week(s) and %ld day(s)",y,m,w,d);
    getch();
}
```



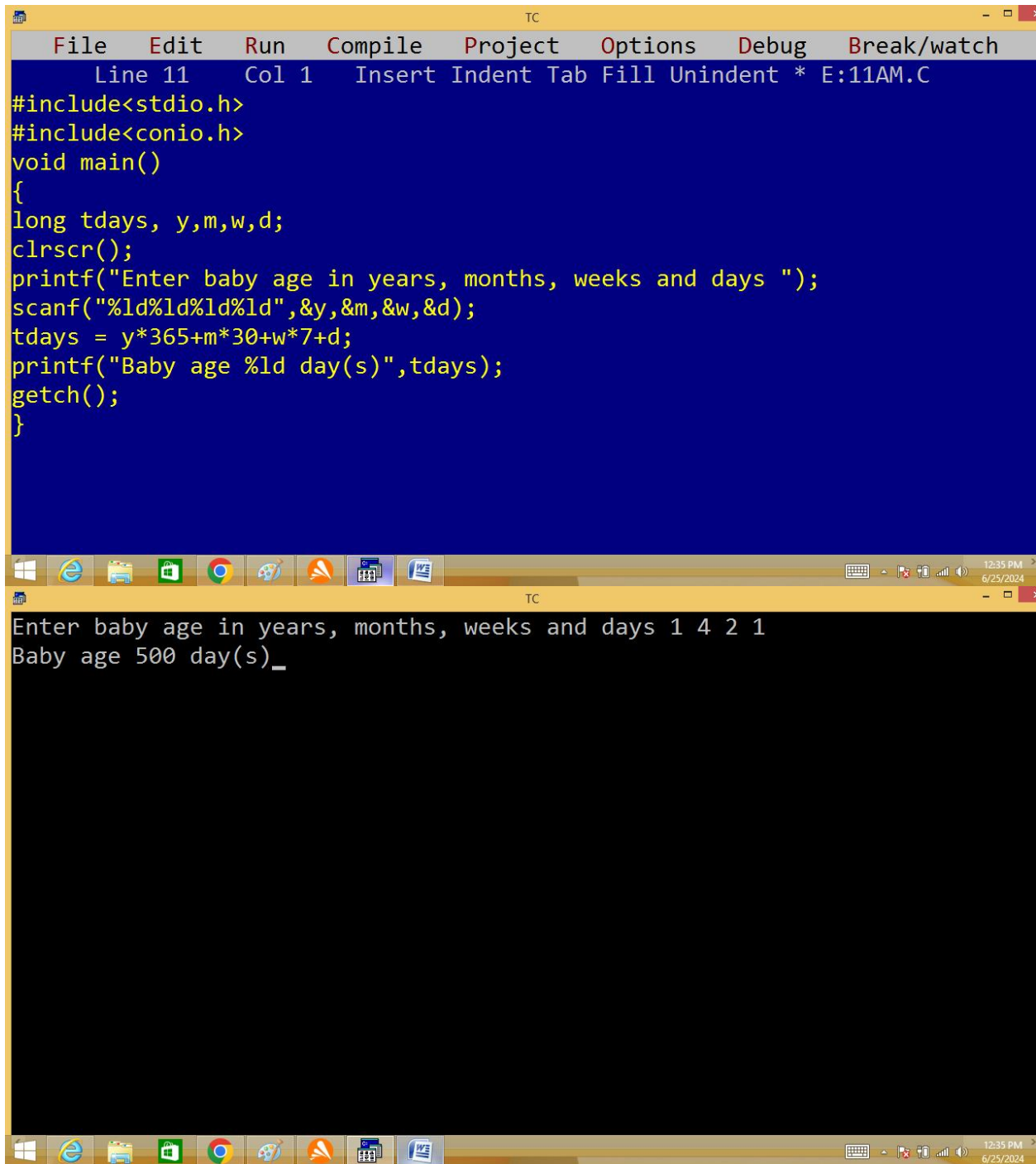
```
TC
Enter baby age in days 3
Baby age 0 year(s) 0 month(s) 0 week(s) and 3 day(s)_
```

```
TC
Enter baby age in days -3
Baby age 0 year(s) 0 month(s) 0 week(s) and -3 day(s)
```

Read baby age in years, months, weeks and days.
Find baby age in total days.

$$\text{tdays} = y * 365 + m * 30 + w * 7 + d;$$

$$\text{tdays} = 1 * 365 + 4 * 30 + 2 * 7 + 1 = 500$$



The image shows two screenshots of the Turbo C++ (TC) IDE. The top screenshot displays the source code of a C program. The bottom screenshot shows the program's execution output.

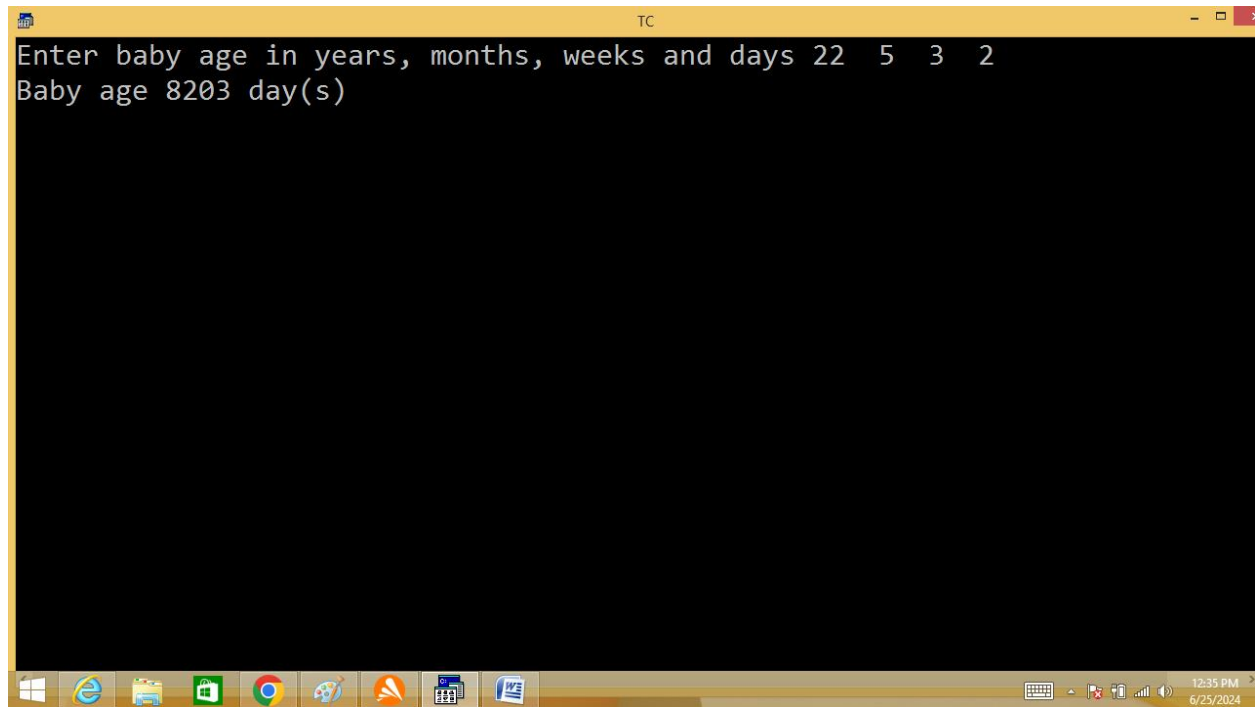
Top Screenshot (Source Code):

```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 11 Col 1 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
long tdays, y,m,w,d;
clrscr();
printf("Enter baby age in years, months, weeks and days ");
scanf("%ld%ld%ld%ld",&y,&m,&w,&d);
tdays = y*365+m*30+w*7+d;
printf("Baby age %ld day(s)",tdays);
getch();
}
```

Bottom Screenshot (Execution Output):

```
TC
Enter baby age in years, months, weeks and days 1 4 2 1
Baby age 500 day(s)_
```

The bottom screenshot shows the program's execution. The user has entered the values 1, 4, 2, and 1 for years, months, weeks, and days respectively. The program has calculated the total age in days as 500 and displayed the output "Baby age 500 day(s)". The cursor is positioned at the end of the output line.



```
TC
Enter baby age in years, months, weeks and days 22 5 3 2
Baby age 8203 day(s)
```

The screenshot shows a Turbo C++ (TC) window with a black background and white text. The title bar of the window is yellow and contains the text "TC". The main window area displays the prompt "Enter baby age in years, months, weeks and days" followed by the input "22 5 3 2". Below this, the output "Baby age 8203 day(s)" is displayed. The Windows taskbar is visible at the bottom, showing various application icons and the system clock indicating 12:35 PM on 6/25/2024.

Read two numbers and perform all arithmetic operations [+, -, *, %, /]:

```
TC
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b,c,d,e,f,g; clrscr();
printf("Enter two numbers ");scanf("%d %d",&a, &b);
c=a+b;
d=a-b;
e=a*b;
f=a%b;
g=a/b;
printf("Sum=%d\n",c);
printf("Sub=%d\n",d);
printf("Pro=%d\n",e);
printf("Mod=%d\n",f);
printf("Div=%d\n",g);
getch();
}
```

Enter two numbers 10 5
Sum=15
Sub=5
Pro=50
Mod=0
Div=2

Page: 27 of 28 | Words: 115 | 100%

The image shows two screenshots of the Turbo C++ (TC) IDE. The top screenshot displays the source code of a C program that calculates the sum, difference, product, modulus, and division of two numbers. The code is as follows:

```
File Edit Run Compile Project Options Debug Break/watch
Line 6 Col 1 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b;
clrscr();
printf("Enter two numbers ");scanf("%d %d",&a, &b);
printf("Sum=%d\n",a+b);
printf("Sub=%d\n",a-b);
printf("Pro=%d\n",a*b);
printf("Mod=%d\n",a%b);
printf("Div=%d\n",a/b);
getch();
}
```

The bottom screenshot shows the program's execution output after the user has entered the numbers 5 and 2:

```
Enter two numbers 5 2
Sum=7
Sub=3
Pro=10
Mod=1
Div=2
```

The Windows taskbar at the bottom of both screenshots shows the time as 12:46 PM and 12:47 PM on 6/25/2024.

The image shows a screenshot of the Turbo C++ (TC) IDE. The top window is the source code editor, which has a blue background and yellow text. It contains a C program that takes two integers as input and calculates their sum, difference, product, modulus, and division. The code is as follows:

```
File Edit Run Compile Project Options Debug Break/watch
Line 12 Col 26 Insert Indent Tab Fill Unindent * E:11AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b;
clrscr();
printf("Enter two numbers ");scanf("%d %d",&a, &b);
printf("Sum=%d\n",a+b);
printf("Sub=%d\n",a-b);
printf("Pro=%d\n",a*b);
printf("Mod=%d\n",a%b);
printf("Div=%.2f\n",(float)a/b);
getch();
}
```

The bottom window is the output console, which has a black background and white text. It shows the execution of the program with the input "5 2" and the corresponding results:

```
Enter two numbers 5 2
Sum=7
Sub=3
Pro=10
Mod=1
Div=2.50
```

The Windows taskbar is visible at the bottom of the screen, showing various application icons and the system clock indicating 12:48 PM on 6/25/2024.

The image shows a screenshot of the Turbo C++ (TC) IDE. The top window is the code editor, titled 'TC', displaying a C program. The menu bar includes File, Edit, Run, Compile, Project, Options, Debug, and Break/watch. The status bar at the bottom of the editor shows 'Line 3', 'Col 17', and 'Insert Indent Tab Fill Unindent * E:11AM.C'. The code is as follows:

```
#include<stdio.h>
#include<conio.h>
#include<math.h>_
void main()
{
float a,b;
clrscr();
printf("Enter two numbers ");scanf("%f %f",&a, &b);
printf("Sum=%.2f\n",a+b);
printf("Sub=%.2f\n",a-b);
printf("Pro=%.2f\n",a*b);
printf("Mod=%.2f\n",fmod(a,b));
printf("Div=%.2f\n",a/b);
getch();
}
```

The bottom window is the output console, also titled 'TC'. It shows the program's execution with the input '5.5 4.4' and the following results:

```
Enter two numbers 5.5 4.4
Sum=9.90
Sub=1.10
Pro=24.20
Mod=1.10
Div=1.25
```

The Windows taskbar at the bottom of the screen shows the time as 12:50 PM on 6/25/2024.

1. Celsius to Fahrenheit conversion

$$37^{\circ}\text{C} = 98.6^{\circ}\text{F}$$

2. Fahrenheit to Celsius

$$3. (2+3)^2 = 2^2 + 3^2 + 2*2*3 = 25$$

