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Facultad de Ingeniería en Sistemas

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## **INTRODUCCION**

En el presente trabajo podremos ver el desarrollo y la programación de los 12 teoremas de la probabilidad en la cual miramos cómo se implementa al código de los teoremas ya que ninguno se parece en cuanto código.

Para poder ser más organizados se implementó un menú con la opción de seleccionar qué teorema y su función para poder resolver ejercicios, principalmente sencillos. El desarrollo de algunos teoremas se ve limitados y sencillos a cómo debería ser, pero cumplen con su función para problemas sencillos y cortos.

El programa a escoger fue Java NetBeans ya que es un programa versátil y un poco más entendible de usar que otros programas, a la vez nos permitió el uso de diversas herramientas para el desarrollo del programa.



# CONTENIDO

## Interfaz y código del menú



```
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help Probabilidades - Apache NetBeans IDE 12.4 Search (Ctrl+I) Projects X Files Services X <default config> 227.5/490.0MB Generated Code Source Design History & Teorema1.java Teorema10.java Teorema11.java Teorema2.java Teorema3.java Teorema4.java Teorema5.java Teorema6.java Teorema7.java Teorema8.java Teorema9.java Teoremas12.java Imagenes Test Packages Libraries Test Libraries Menu_Inicio - Navigator X Members <em...> Menu_Inicio :: JFrame & Menu_Inicio() { initComponents(); this.setLocationRelativeTo(this); } @SuppressWarnings("unchecked") Generated Code private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) { Teorema3 abrir=new Teorema3(); abrir.setVisible(true); dispose(); } private void jButton9ActionPerformed(java.awt.event.ActionEvent evt) { Teorema9 panta=new Teorema9(); panta.setVisible(true); dispose(); } private void jButton5ActionPerformed(java.awt.event.ActionEvent evt) { Teorema4 abrir=new Teorema4(); abrir.setVisible(true); dispose(); } private void jButton10ActionPerformed(java.awt.event.ActionEvent evt) { Teorema10 abrir=new Teorema10(); abrir.setVisible(true); dispose(); } private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) { Teorema1 abrir=new Teorema1(); abrir.setVisible(true); dispose(); } private void jButton11ActionPerformed(java.awt.event.ActionEvent evt) { Teorema11 abrir=new Teorema11(); abrir.setVisible(true); dispose(); } private void jButton12ActionPerformed(java.awt.event.ActionEvent evt) { Teorema12 abrir=new Teorema12(); abrir.setVisible(true); dispose(); } private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) { Teorema2 abrir=new Teorema2(); abrir.setVisible(true); dispose(); } private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) { Teorema4 abrir=new Teorema4(); abrir.setVisible(true); dispose(); } private void jButton6ActionPerformed(java.awt.event.ActionEvent evt) { Teorema6 abrir=new Teorema6(); abrir.setVisible(true); dispose(); } private void jButton7ActionPerformed(java.awt.event.ActionEvent evt) { Teorema7 abrir=new Teorema7(); abrir.setVisible(true); dispose(); } private void jButton8ActionPerformed(java.awt.event.ActionEvent evt) { Teorema8 abrir=new Teorema8(); abrir.setVisible(true); dispose(); } Output 3:5 INS Unix (LF)
```

The screenshot shows the Apache NetBeans IDE interface with the title bar "Probabilidades - Apache NetBeans IDE 12.4". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, and Help. The toolbar has icons for file operations like New, Open, Save, and Run. The source editor displays the Java code for "Menu\_Inicio.java". The code defines a class "Menu\_Inicio" that extends "javax.swing.JFrame". It contains a constructor "Menu\_Inicio()" and several actionPerformed methods for buttons. These methods create instances of other Java classes ("Teorema1" through "Teorema12") and set their visibility to true before disposing of the current frame. The code uses annotations like "@SuppressWarnings("unchecked")" and "Generated Code" to indicate parts of the code were generated by the IDE. The left sidebar shows the project structure with source packages like "Probabilidades" and files like "Teorema1.java" through "Teoremas12.java". The bottom status bar shows "3:5 INS Unix (LF)".

Probabilidades - Apache NetBeans IDE 12.4

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    Teorema5 panta=new Teorema5();
    panta.setVisible(true);
    dispose();
}

private void jButton11ActionPerformed(java.awt.event.ActionEvent evt) {
    Teorema11 panta=new Teorema11();
    panta.setVisible(true);
    dispose();
}

private void jButton12ActionPerformed(java.awt.event.ActionEvent evt) {
    Teorema6 panta=new Teorema6();
    panta.setVisible(true);
    dispose();
}

private void jButton13ActionPerformed(java.awt.event.ActionEvent evt) {
    Teoremas12 panta=new Teoremas12();
    panta.setVisible(true);
    dispose();
}
```

Probabilidades - Apache NetBeans IDE 12.4

```
panta.setVisible(true);
dispose();

private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
    Teorema2 abrir=new Teorema2();
    abrir.setVisible(true);
    dispose();
}

private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
    Teorema1 abrir=new Teorema1();
    abrir.setVisible(true);
    dispose();/// TODO add your handling code here:
}

/*
 * @param args the command line arguments
 */
public static void main(String args[]) {
    // Set the Nimbus look and feel
    Look and feel setting code (optional)

    // Create and display the form
    java.awt.EventQueue.invokeLater(new Runnable() {
        public void run() {
            new Menu_Inicio().setVisible(true);
        }
    });
}

// Variables declaration - do not modify
private javax.swing.JButton jButton1;
private javax.swing.JButton jButton11;
```

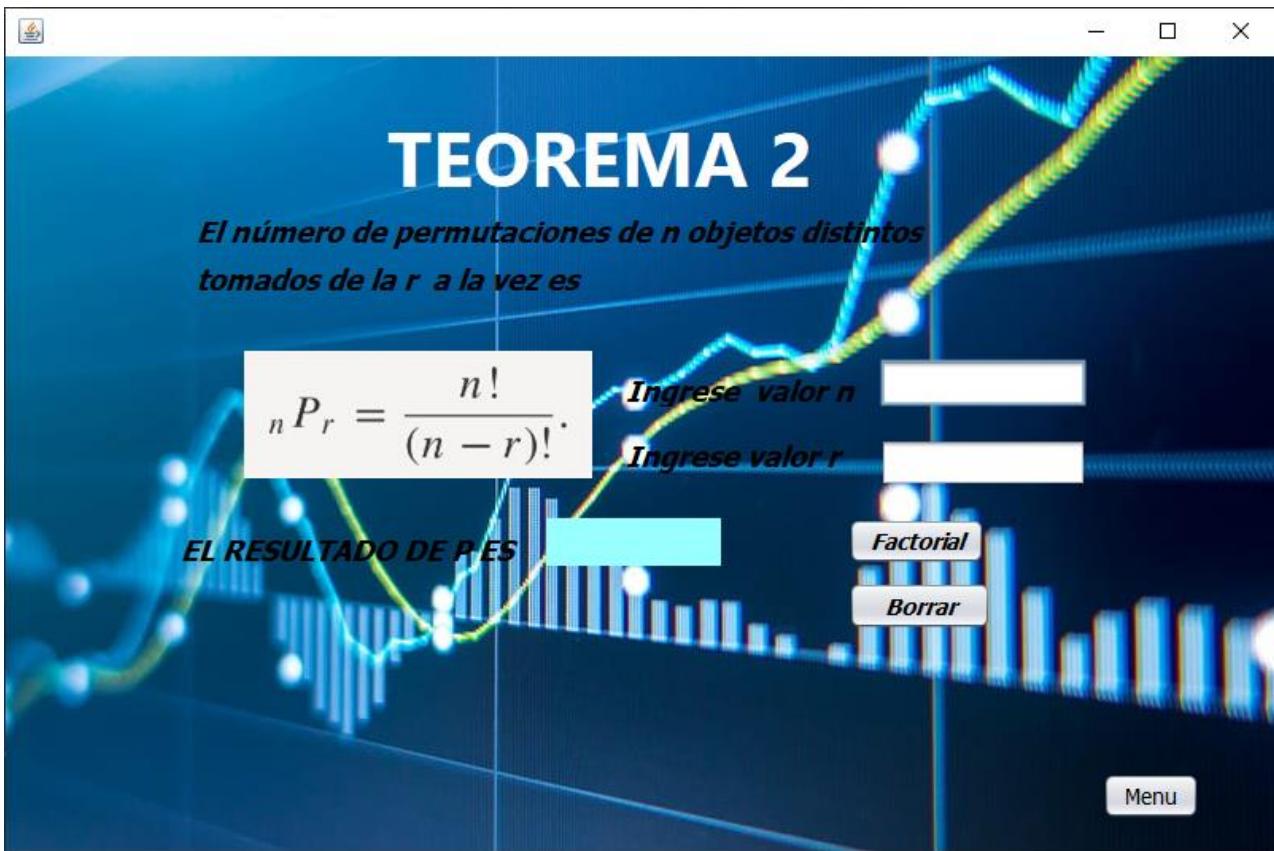
## TEOREMA 1 Y CODIGO



The screenshot shows the Apache NetBeans IDE interface with the title bar "Probabilidades - Apache NetBeans IDE 12.4". The main area displays the code for the "Menu\_Inicio.java" file, which is part of the "Teorema1" project. The code implements a factorial calculator. The "Source" tab is selected, showing the following Java code:

```
public class Teorema1 extends javax.swing.JFrame {  
    public Teorema1() {  
        initComponents();  
        this.setLocationRelativeTo(this);  
    }  
    @SuppressWarnings("unchecked")  
    Generated Code  
    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
        Menu_Inicio cerrar=new Menu_Inicio();  
        cerrar.setVisible(true);  
        dispose();  
    }  
    private void btnBorrarActionPerformed(java.awt.event.ActionEvent evt) {  
        Resultado.setText("");  
        txtIngresol.setText("");  
    }  
    private void btnCalcular1ActionPerformed(java.awt.event.ActionEvent evt) {  
        try {  
            int factorial=1;  
            Integer numero_ingresado=new Integer(txtIngresol.getText());  
            for (int i= numero_ingresado; i>=1; i--){  
                factorial*=factorial*i;  
            }  
            Resultado.setText(""+factorial);  
        } catch(NumberFormatException e){  
            Resultado.setText("SOLO PUEDE INGRESAR NUMEROS");  
        }  
    }  
}
```

## TEOREMA 2 Y CODIGO



File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help Probabilidades - Apache NetBeans IDE 12.4 Search (Ctrl+F) <default config> Projects Services Files Start Page Menu\_Inicio.java Teorema1.java Teorema2.java

```
144
145     private void btnBorrarActionPerformed(java.awt.event.ActionEvent evt) {
146         txtIngreso1.setText("");
147         txtIngreso2.setText("");
148         ResultadoT2.setText("");
149
150     }
151
152     private void btnCalcularActionPerformed(java.awt.event.ActionEvent evt) {
153
154         try {
155
156             int factorial=1;factorial=1; int ex = 1;
157             Integer numero_ingresado=new Integer(txtIngreso1.getText());
158             Integer numero_ingresadol=new Integer(txtIngreso2.getText());
159             ex=numero_ingresado-numero_ingresadol;
160
161             for (int i= numero_ingresado; i>=1; i--)
162             {
163                 factorial=factorial*i;
164             }
165
166             for (int j= ex; j>=1; j--)
167             {
168                 factorial2=factorial2*j;
169             }
170             ResultadoT2.setText(""+factorial/factorial2);
171         }
172     }
173     catch(NumberFormatException e){
174         ResultadoT2.setText("SOLO PUEDE INGRESAR NUMEROS");
175     }
176 }
```

factorial2 - Navigator Members inrComponents jButton1ActionPerformed(ActionEvent evt) txtIngreso1ActionPerformed(ActionEvent evt) txtIngreso2ActionPerformed(ActionEvent evt) ResultadoT2.JLabel ResultadoT2.JLabel btbBorrar.JButton btbCalcular.JButton factorial2 : int

Output

Probabilidades (run) 4:1 INS Unix (LF)

## TEOREMA 3 Y CODIGO



File Edit View Navigate Source Refactor Run Debug Profile Team Window Help Probabilidades - Apache NetBeans IDE 12.4 Search (Ctrl+)

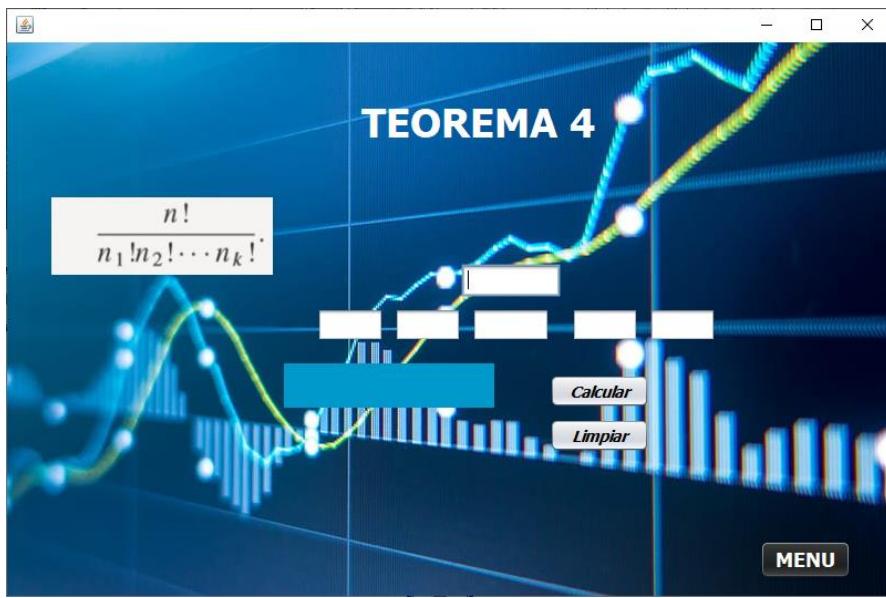
Projects Services Files Start Page Menu\_Inicio.java Teorema1.java Teorema2.java Teorema3.java

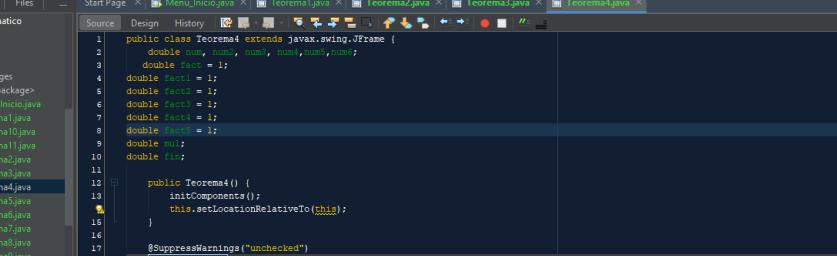
```
Source Design History 13     * WARNING: Do NOT modify this code. The content of this method is always
14     * regenerated by the Form Editor.
15     */
16     @SuppressWarnings("unchecked")
17     // Generated Code
18
19     private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
20         Menu_Inicio cerrar=new Menu_Inicio();
21         cerrar.setVisible(true);
22         dispose();
23     }
24
25     private void btnCalcular1ActionPerformed(java.awt.event.ActionEvent evt) {
26         try {
27             int factorial=1;
28             Integer numero_ingresado=new Integer(txtIngresol.getText());
29
30             for (int i = numero_ingresado-1; i>=1; i--){
31                 factorial=factorial*i;
32             }
33             Resultado.setText(""+factorial);
34         } catch(NumberFormatException e){
35             Resultado.setText("SOLO PUEDE INGRESAR NUMEROS");
36         }
37     }
38
39     private void btnBorrarActionPerformed(java.awt.event.ActionEvent evt) {
40         Resultado.setText("");
41         txtIngresol.setText("");
42     }
43
44 }
```

jButton1ActionPerformed - Na... Members Teorema3.java Teorema3() btnBorrarActionPerformed(Act... btnCalcular1ActionPerformed(Act... initComponents() jButton1ActionPerformed(Act... Resultado : JLabel btnBorrar : JButton btnCalcular1 : JButto...

Output Probabilidades (run) running\_ 110:9 INS Unix (LF)

## **TEOREMA 4 Y CODIGO**





The screenshot shows the Apache NetBeans IDE interface with the following details:

- File Menu:** File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help.
- Toolbar:** Standard Java development tools like New, Open, Save, Cut, Copy, Paste, Find, etc.
- Project Explorer:** Shows the project structure under "Projects X".
  - msceroAutomatico
  - MiPrP
  - practicas1
  - Probabilidades
  - Source Packages
    - <default package>
    - Menu\_Inicio.java
    - Teorema1.java
    - Teorema2.java
    - Teorema3.java
    - Teorema4.java
- Code Editor:** The current file is Teorema4.java, which contains Java code for calculating factorials. The code includes imports for java.awt.event.ActionEvent and java.awt.event.ActionListener, and defines a class Teorema4 extending javax.swing.JFrame. It features several nested for loops to calculate factorials for numbers from 1 to 100. A generated code section is also present.
- Output:** Shows "Probabilidades (run)" and "running...".
- Bottom Bar:** INS UX (LF).

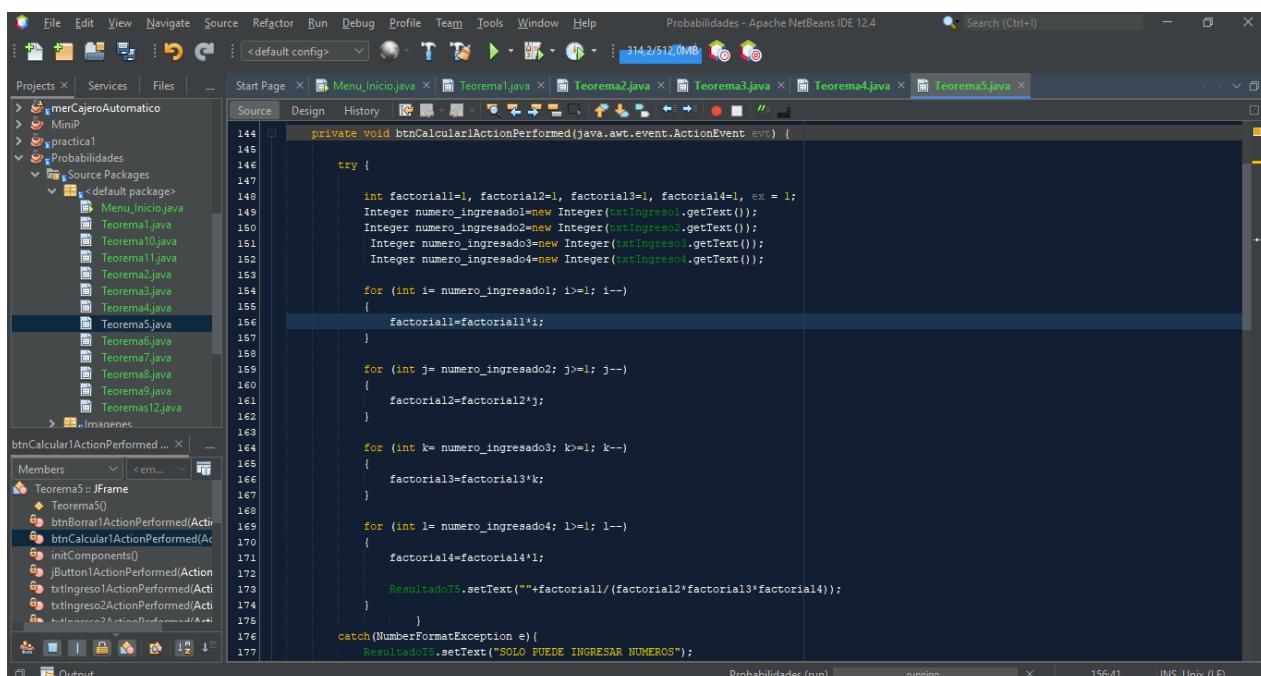
The screenshot shows the Apache NetBeans IDE interface with the following details:

- Toolbar:** File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help.
- Project Explorer:** Shows a project named "Probabilidades" containing packages like "Prácticas", "Probabilidades", and "Source Packages".
- Code Editor:** Displays Java code for a class named "Teorema4.java". The code calculates the factorial of a number using nested loops and concatenates the results into a string.

```
109     num = Integer.parseInt(txt.getText());
110     num2 = Integer.parseInt(txt2.getText());
111
112     for (int i = 1; i <= num; i++) {
113         for (int i = 1; i <= num2; i++) {
114             fact = fact + i;
115         }
116         for (int i = 1; i <= num; i++) {
117             fact = fact * i;
118         }
119         for (int i = 1; i <= num2; i++) {
120             fact = fact * i;
121         }
122         fact = fact + i;
123         for (int i = 1; i <= num2; i++) {
124             fact = fact * i;
125         }
126         mult=fact*fact*fact*fact*fact;
127         fact = fact / num;
128         Res.setText(mult+fact);
129     }
130
131     private void btnNuevoActionPerformed(java.awt.event.ActionEvent evt) {
132         Menu_Inicio cerrar=new Menu_Inicio();
133         cerrar.setVisible(true);
134         dispose();
135     }
136
137     private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
138         num.setText(null);
139         num2.setText(null);
140         fact1.setText(null);
141         fact2.setText(null);
142         fact3.setText(null);
143         fact4.setText(null);
144         Res.setText(null);
145     }
146 }
```

- Bottom Status Bar:** Shows "Probabilidades (run)" and "120x40".

## TEOREMA 5 Y CODIGO

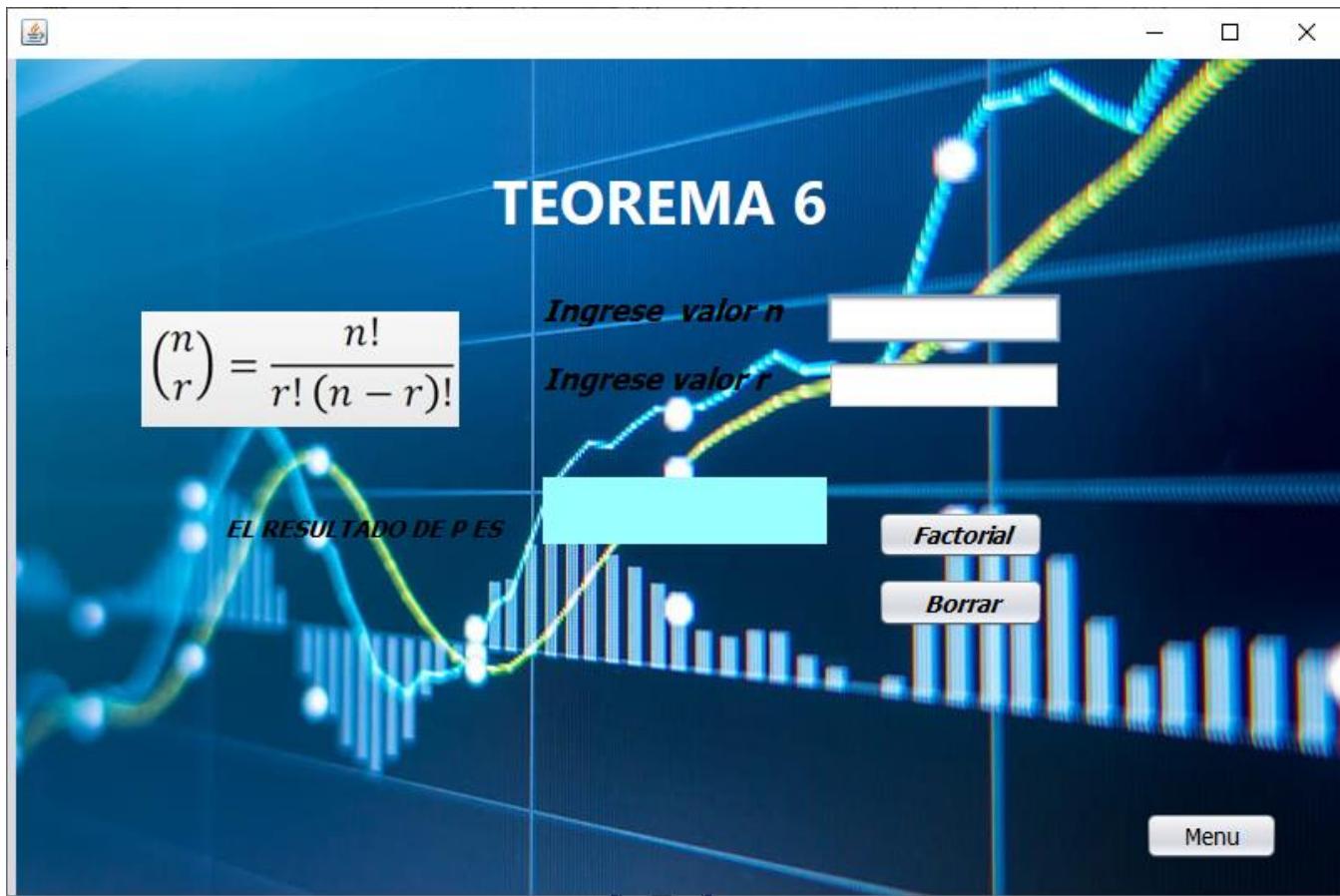


```

175 }
176     catch(NumberFormatException e){
177         ResultadoT5.setText("SOLO PUEDE INGRESAR NUMEROS");
178     }
179 }
180
181 private void btnBorrar1ActionPerformed(java.awt.event.ActionEvent evt) {
182     txtIngresol.setText("");
183     txtIngreso2.setText("");
184     txtIngreso3.setText("");
185     txtIngreso4.setText("");
186     ResultadoT5.setText("");
187 }

```

## TEOREMA 6 Y CODIGO



File Edit View Navigate Source Refactor Run Debug Profile Team Window Help Probabilidades - Apache NetBeans IDE 12.4 Search (Ctrl+I)

Projects X Services Files X Start Page X Menu\_Inicio.java X Teorema1.java X Teorema2.java X Teorema3.java X Teorema4.java X Teorema5.java X Teorema6.java X

Source Design History

```
117     private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
118         Menu_Inicio cerrar=new Menu_Inicio();  
119         cerrar.setVisible(true);  
120         dispose();  
121     }  
122  
123     private void txtIngreso2ActionPerformed(java.awt.event.ActionEvent evt) {  
124     }  
125  
126     private void btnCalcular1ActionPerformed(java.awt.event.ActionEvent evt) {  
127         try {  
128             int factorial1=1, factorial2=1, factorial3=1, ex = 1;  
129             Integer numero_ingresado=new Integer(txtIngreso1.getText());  
130             Integer numero_ingresado2=new Integer(txtIngreso2.getText());  
131             ex=numero_ingresado-numero_ingresado2;  
132             for (int i= numero_ingresado; i>=1; i--)  
133             {  
134                 factorial1=factorial1*i;  
135             }  
136             for (int j= ex; j>=1; j--)  
137             {  
138                 factorial2=factorial2*j;  
139             }  
140             for (int k= numero_ingresado; k>=1; k--)  
141             {  
142                 factorial3=factorial3*k;  
143             }  
144             Resultado02.setText(""+factorial1/(factorial2*factorial3));  
145         }  
146         catch(NumberFormatException e){  
147             Resultado02.setText("SOLO PUEDE INGRESAR NUMEROS");  
148         }  
149     }  
150 }
```

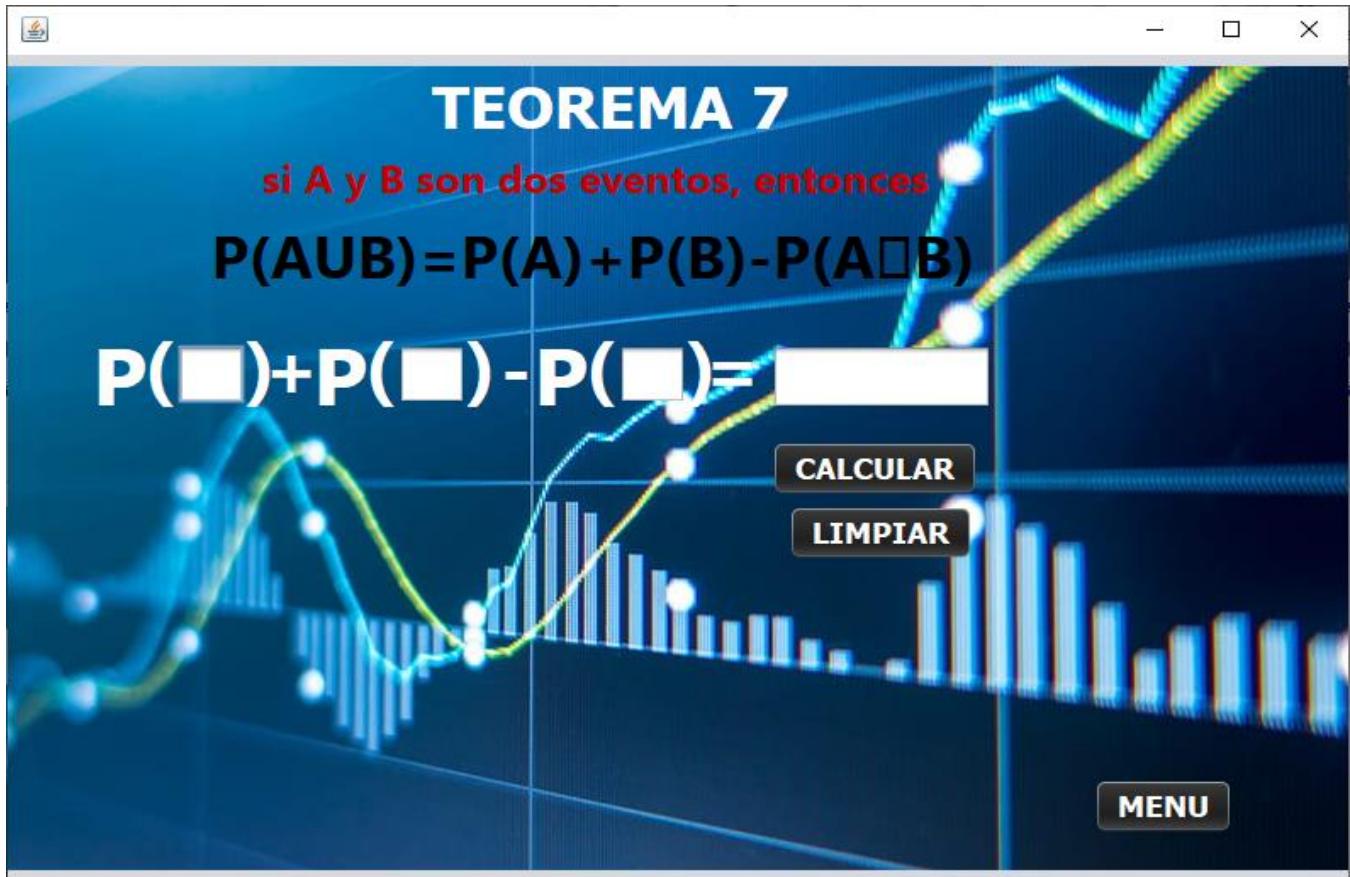
Members

Teorema6 :: JFrame

- Teorema6()
- btnBorrar1ActionPerformed(ActionEvent evt)
- btnCalcular1ActionPerformed(ActionEvent evt)
- initComponents()
- jButton1ActionPerformed(ActionEvent evt)
- txtIngreso1ActionPerformed(ActionEvent evt)
- txtIngreso2ActionPerformed(ActionEvent evt)

Probabilidades (run) running- 8 142:54 INS Unix (LF)

## TEOREMA 7 Y CODIGO



File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help Probabilidades - Apache NetBeans IDE 12.4 Search (Ctrl+)

Projects Services Files ... Teorema1.java Teorema2.java Teorema3.java Teorema4.java Teorema5.java Teorema6.java Teorema7.java

Source Design History

```
16 // Generated Code
17
18 private void btnmenuActionPerformed(java.awt.event.ActionEvent evt) {
19     Menu_Inicio cerrar=new Menu_Inicio();
20     cerrar.setVisible(true);
21     dispose();
22 }
23
24 private void btncalcularActionPerformed(java.awt.event.ActionEvent evt) {
25     txtTotal.setText(null);
26     CajaNum1.setText(null);
27     CajaNum2.setText(null);
28     CajaNum3.setText(null);
29 }
30
31 private void btnlimpiarActionPerformed(java.awt.event.ActionEvent evt) {
32     float Num1;
33     float Num2;
34     float Num3;
35     float Total;
36
37     Num1=Float.parseFloat(CajaNum1.getText());
38     Num2=Float.parseFloat(CajaNum2.getText());
39     Num3=Float.parseFloat(CajaNum3.getText());
40
41     Total=Num1+Num2-Num3;
42
43     txtTotal.setText(String.valueOf(Total));
44 }
```

btncalcularActionPerf... Members

Teorema7 : JFrame

- Teorema7()
- bncalcularActionPerformed(ActionEvent evt)
- btnlimpiarActionPerformed(ActionEvent evt)
- btnmenuActionPerformed(ActionEvent evt)
- initComponents()
- CajaNum1 : JTextField
- CajaNum2 : JTextField
- CajaNum3 : JTextField

Output

## TEOREMA 8 Y CODIGO



File Edit View Navigate Source Refactor Run Debug Profile Team Window Help Probabilidades - Apache NetBeans IDE 12.4 Search (Ctrl+F) 250.6/512.0MB

Projects Services Files ...va Teorema2.java Teorema3.java Teorema4.java Teorema5.java Teorema6.java Teorema7.java Teorema8.java

Source Design History

```
212     }
213
214     private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
215         Menu_Inicio cerrar=new Menu_Inicio();
216         cerrar.setVisible(true);
217         dispose();
218     }
219
220     private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
221         txtTotal.setText(null);
222         txt1.setText(null);
223         txt2.setText(null);
224         txt3.setText(null);
225         txt4.setText(null);
226     }
227
228     private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
229         float Num1;
230         float Num2;
231         float Num3;
232         float Num4;
233         float Total;
234
235         Num1=Float.parseFloat(txt1.getText());
236         Num2=Float.parseFloat(txt2.getText());
237         Num3=Float.parseFloat(txt3.getText());
238         Num4=Float.parseFloat(txt4.getText());
239
240         Total=Num1+Num2+Num3+Num4;
241
242         txtTotal.setText(String.valueOf(Total));
243     }
244
245 }
```

jButton3ActionPerformed - Na... Members Teorema8.java Teorema9.java Teoremas12.java

Members <em...>

Teorema8 : JFrame

- Teorema8()
- initComponents()
- jButton1ActionPerformed(ActionEvent)
- jButton2ActionPerformed(ActionEvent)
- jButton3ActionPerformed(ActionEvent)
- txtTotalActionPerformed(ActionEvent)
- jbButton1.JButton

Output

10

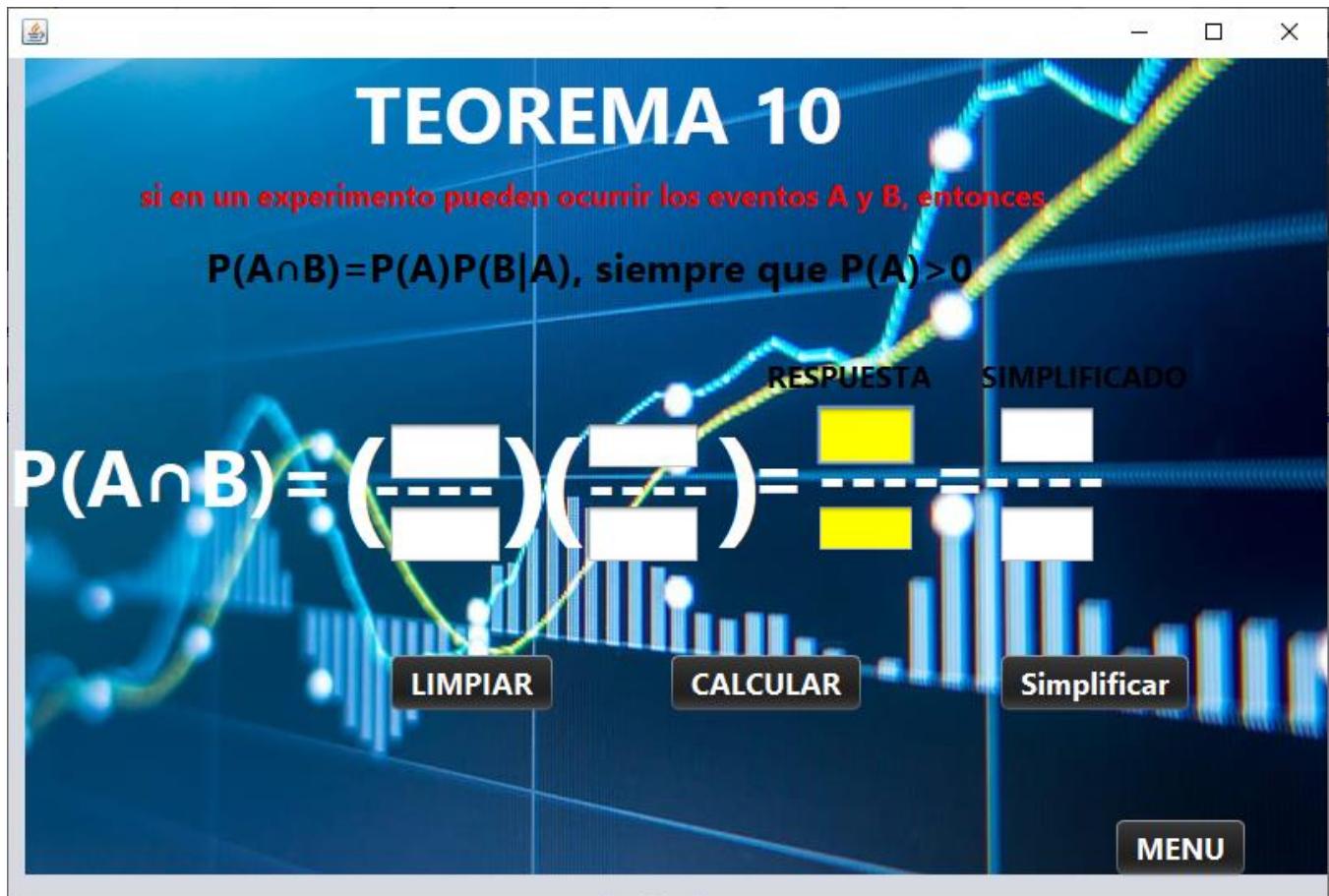
## TEOREMA 9 Y CODIGO



The screenshot shows the Apache NetBeans IDE interface with the file "Teorema9.java" open. The code implements the logic for calculating probabilities based on the complement rule:

```
private void btnCalcularActionPerformed(java.awt.event.ActionEvent evt) {  
    float Num1;  
    float Num2;  
    float Total;  
  
    Num1=Float.parseFloat(txtP1.getText());  
    Num2=Float.parseFloat(txtP2.getText());  
  
    Total=Num1+Num2;  
  
    txtTotal.setText(String.valueOf(Total));  
    txtE2.setText(String.valueOf(Total));  
}  
  
private void txtE2ActionPerformed(java.awt.event.ActionEvent evt) {  
}  
  
private void txtResActionPerformed(java.awt.event.ActionEvent evt) {  
    // TODO add your handling code here:  
}  
  
private void btnResultadoActionPerformed(java.awt.event.ActionEvent evt) {  
    float Num1;  
    float Num2;  
    float Total;  
  
    Num1=Float.parseFloat(txtE1.getText());  
    Num2=Float.parseFloat(txtE2.getText());  
  
    Total=Num1-Num2;  
    //txtE2.setText(String.valueOf(Total));  
    txtRes.setText(String.valueOf(Total));  
}
```

## TEOREMA 10 Y CODIGO



File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help Probabilidades - Apache NetBeans IDE 12.4 Search (Ctrl+.)

Projects Services Files ... Teorema4.java Teorema5.java Teorema6.java Teorema7.java Teorema8.java Teorema9.java Teorema10.java

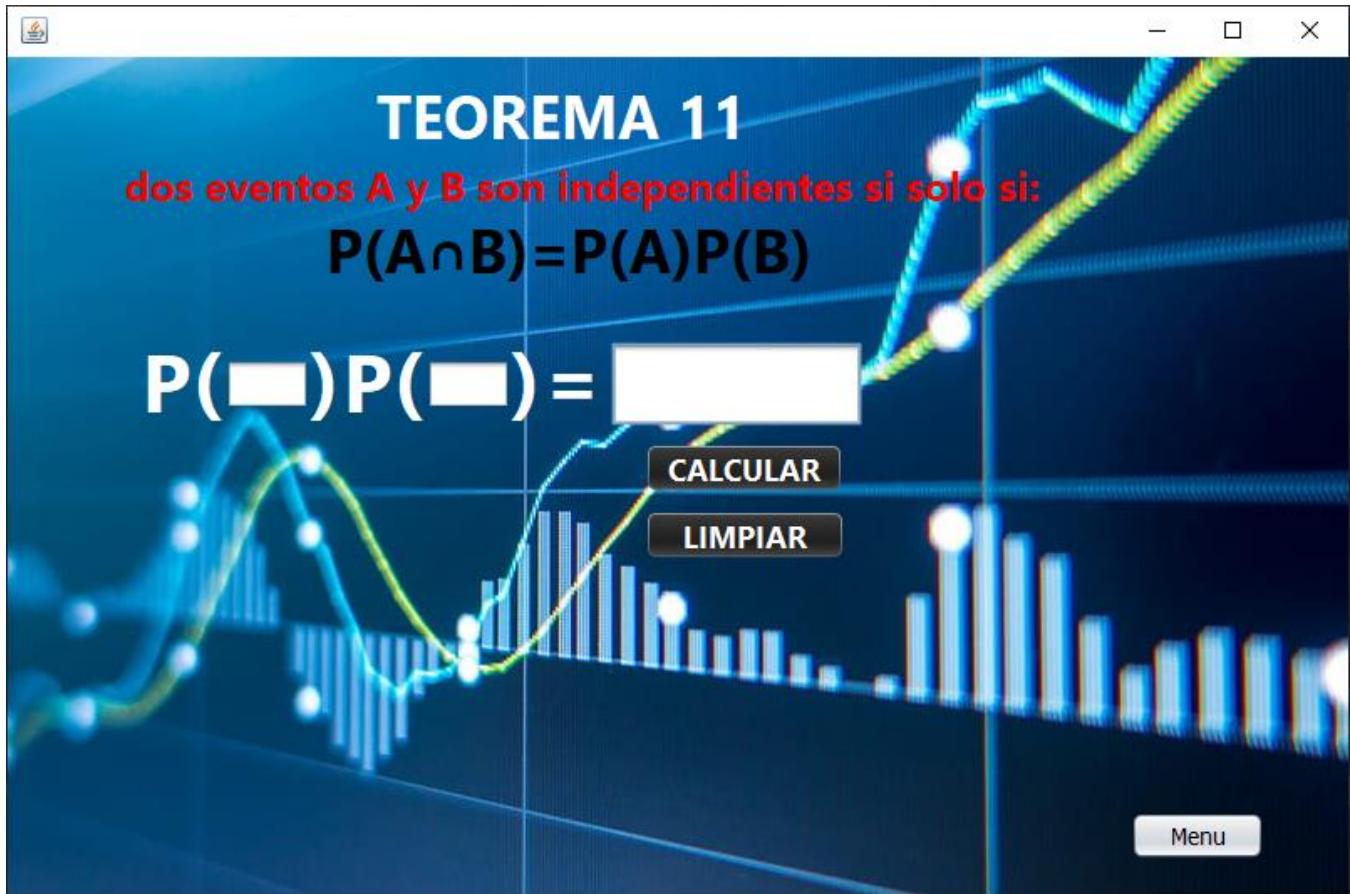
Source Design History

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
    float Num1;  
    float Num2;  
    float Num3;  
    float Num4;  
    float Total1;  
    float Total2;  
  
    Num1=Float.parseFloat(txt1.getText());  
    Num2=Float.parseFloat(txt2.getText());  
    Num3=Float.parseFloat(txt3.getText());  
    Num4=Float.parseFloat(txt4.getText());  
  
    Total1=Num1*Num3;  
    Total2=Num2*Num4;  
  
    txtR3.setText(String.valueOf(Total1));  
    txtR1.setText(String.valueOf(Total2));  
}  
  
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {  
    float Num1;  
    float Num2;  
    float Total1;  
    float Total2;  
  
    Num1=Float.parseFloat(txtR1.getText());  
    Num2=Float.parseFloat(txtR2.getText());  
  
    Total1=Num1/2;  
    Total2=Num2/2;  
  
    txtR5.setText(String.valueOf(Total1));  
    txtR2.setText(String.valueOf(Total2));  
}
```

jButton1ActionPerformed - Na... Members Teorema10.java Teorema10() initComponents() jButton1ActionPerformed(ActionEvent evt) jButton2ActionPerformed(ActionEvent evt) jButton3ActionPerformed(ActionEvent evt) jButton4ActionPerformed(ActionEvent evt) txt3ActionPerformed(ActionEvent evt) jButton1.JButton

Output Probabilidades (run) running... 243:1 INS Unix (LF)

## TEOREMA 11 Y CODIGO



The screenshot shows the Apache NetBeans IDE interface with the title bar "Probabilidades - Apache NetBeans IDE 12.4". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help, and a search bar "Search (Ctrl+I)". The Projects tab shows several Java files under the "Probabilidades" project. The code editor displays the file "Teorema11.java" with the following content:

```
155
156     private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
157         txt1.setText(null);
158         txt2.setText(null);
159         txt3.setText(null);
160     }
161
162     private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
163         float Num1;
164         float Num2;
165         float Total;
166
167         Num1=Float.parseFloat(txt1.getText());
168         Num2=Float.parseFloat(txt2.getText());
169
170         Total=Num1*Num2;
171
172         txtTotal.setText(String.valueOf(Total));
173     }
174
175     private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) {
176         Menu_Inicio cerrar=new Menu_Inicio();
177         cerrar.setVisible(true);
178         dispose();
179     }
180
181     private void jButton5ActionPerformed(java.awt.event.ActionEvent evt) {
182         Menu_Inicio cerrar=new Menu_Inicio();
183         cerrar.setVisible(true);
184         dispose();
185     }
186
187
188 }
```

The bottom status bar indicates "Probabilidades (run)" and "running...".

## TEOREMA 12 Y CODIGO



Probabilidades - Apache NetBeans IDE 12.4

```
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help Search (Ctrl+I)
```

Projects Services Files ...va Teorema6.java Teorema7.java Teorema8.java Teorema9.java Teorema10.java Teorema11.java Teoremas12.java

Source Design History <default config> 420/7512,0MB

```
126     private void A2ActionPerformed(java.awt.event.ActionEvent evt) {  
127         // TODO add your handling code here:  
128     }  
  
129     private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
130         num1=Integer.parseInt(A1.getText());  
131         num2=Integer.parseInt(A2.getText());  
132         num3=Integer.parseInt(A3.getText());  
133         base=Integer.parseInt(base.getText());  
134         total1=base-1;  
135         total2=base-2;  
136         total3=num1/base;  
137         total4=num2/base;  
138         total5=num3/base;  
139         total6=total1*total2*total3;  
140         total7=total4*total5*total6;  
141         total8=total7*total2*total3;  
142         Res.setText(String.valueOf(total8));  
143     }  
  
144     private void btnlimpiarActionPerformed(java.awt.event.ActionEvent evt) {  
145         A1.setText(null);  
146         A2.setText(null);  
147         A3.setText(null);  
148         base.setText(null);  
149         Res.setText(null);  
150     }  
  
151     private void btnmenuActionPerformed(java.awt.event.ActionEvent evt) {  
152         Menu_Inicio cerrar=new Menu_Inicio();  
153         cerrar.setVisible(true);  
154         dispose();  
155     }  
156  
157  
158  
159
```

Output Probabilidades (run) running\_ 1:1 INS Unix (LF)

## **CONCLUSION**

Gracias a este proyecto de fin de semestre aprendimos a desarrollar un programa que nos ayuda a resolver problemas basados en los teoremas de la probabilidad, ya que con eso nos hemos dado cuenta sobre cómo se desarrolló el código, los errores que tuvimos y la complejidad para darle su debido funcionamiento.

A la vez pudimos repasar y aprender más sobre cada teorema, ya que cada uno se pensó y sobre cómo realizarlo e implementarlo en código y en el programa. Esto nos ayuda a la vez a experimentar y aprender más sobre el uso del programa Java NetBeans y sobre cómo aprender de nuestros errores.