```
Sub Macro1()
'
' Macro1 Macro
' visual basic atm program .sten object by system .event )hand
' "&chr(10)&"public class transaction box
' "&chr(10)&"const service as decimal =6.5
' "&chr(10)&"const pin as integer +9343
' "&chr(10)&"dim balance as decimal =150
' "&chr(10)&"private sub label 12_click (by sender System.object event arg handles labe
'
End Sub
Sub Macro2()
'
' Macro2 Macro
' type meter three phase ac static watt hous smart
' "&chr(10)&"metering algorith
' "&chr(10)&"accuracy  nomial voltage  mettering frequence metering const functionality current sensor
s energy pulse energy temper detection remote communication iec 62056 extrevm internal battery
'
    ActiveWindow.ActivePane.VerticalPercentScrolled = 205
    ActiveWindow.ActivePane.VerticalPercentScrolled = 146
    Selection.TypeText Text:= _
        "------------------------------------------------------------"
    Selection.TypeText Text:= _
        "------------------------------------------------------------"
    Selection.TypeText Text:="-------"
    Selection.TypeParagraph
    Selection.PasteAndFormat (wdFormatOriginalFormatting)
    ActiveWindow.ActivePane.VerticalPercentScrolled = 146
    Selection.TypeParagraph
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    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.Paste
    ActiveDocument.Save
    ActiveWindow.ActivePane.VerticalPercentScrolled = 207
    ActiveWindow.ActivePane.VerticalPercentScrolled = 202
    ActiveWindow.ActivePane.VerticalPercentScrolled = 197
    ActiveWindow.ActivePane.LargeScroll Down:=1
    ActiveWindow.ActivePane.VerticalPercentScrolled = -75
    ActiveWindow.ActivePane.VerticalPercentScrolled = -41
    Windows("Doc8 drawing tshingombe fiston").Activate
    Windows("Doc2 drawing tshingombe").Activate
    ActiveWindow.ActivePane.VerticalPercentScrolled = 127
    ActiveWindow.Close
    ActiveWindow.Close
    ActiveWindow.Close
    ActiveWindow.Close
    ActiveWindow.Close
    ChangeFileOpenDirectory "C:\Users\Library SIX\Desktop\"
    ActiveDocument.SaveAs2 FileName:="Doc1 tshing.docx", FileFormat:= _
        wdFormatXMLDocument, LockComments:=False, Password:="", AddToRecentFiles _
```

```
        :=True, WritePassword:="", ReadOnlyRecommended:=False, EmbedTrueTypeFonts _
        :=False, SaveNativePictureFormat:=False, SaveFormsData:=False, _
        SaveAsAOCELetter:=False, CompatibilityMode:=15
    ActiveWindow.Close
    Application.Quit
End Sub
Sub Macro3()
'
' Macro3 Macro
' 170.{ " IF (X1=0)+(X2=0)+(X3=0)+(X4=0)+(X5=0)+(X6=0)+(X7=0)+(X8=)THEN "}  OR "SUB"_" CLICK"
' "&chr(10)&" "SELECT REGISTER .ELSE , CPU"=0 ,  ADRESSPIN = 000000000
' "&chr(10)&"180 END IF " IF (S1=0)+(S2=0)+(S3=0)+(S4=0)+(S5=0)+(S6=0)+(S7=0)+(S8=0)THEN "}  OR "SUB"_
" CLICK
' "&chr(10)&"EXECU
'
    Application.Run MacroName:="frm1"
End Sub
Sub Macro4()
'
' Macro4 Macro
' 170.{ " IF (X1=0)+(X2=0)+(X3=0)+(X4=0)+(X5=0)+(X6=0)+(X7=0)+(X8=0)THEN "}  OR "SUB"_" CLICK"
' "&chr(10)&" SELECT REGISTER .ELSE , CPU ,
' "&chr(10)&"180 END IF " IF (S1=1)+(S2=1)+(S3=1)+(S4=1)+(S5=1)+(S6=1)+(S7=1)+(S8=1)THEN "}  OR "SUB"_
" CLICK
' "&chr(10)&"EXECUTION LOOP
'

'
    Application.Run MacroName:="frm1"
    ActiveWindow.ActivePane.VerticalPercentScrolled = 119
    Selection.Copy
    Application.Run MacroName:="frm1"
End Sub
Sub Macro5()
'
' Macro5 Macro
' 10.INPUT X1
' "&chr(10)&"20. INPUT .X2
' "&chr(10)&"30. INPUT X3
' "&chr(10)&"40. INPUT X4
' "&chr(10)&"50,IN[UT X5
' "&chr(10)&"60. INPUT X6
' "&chr(10)&"60.INPUT .X7.
'

' "&chr(10)&" 70.OUTPUT  S1
' "&chr(10)&"80.OUTPUT.S2
' "&chr(10)&"90,OUTPUT S3
' "&chr(10)&"100.OUTPUT S4
' "&chr(10)&"110.OUTPUT S5
' "&chr(10)&"120 OUTPUT S6
' "&chr(10)&"130.OUTPUT S7
' "&chr(10)&"140.OUTPUT
' "&chr(10)&"150 SELECT REGISTER
' "&chr(10)&"150 OUTPUT HARDW
'
    Application.Run MacroName:="frm1"
End Sub
Sub frm1()
'
' frm1 Macro
'
'

End Sub
Sub Macro24()
'
' Macro24 Macro
'
' "&chr(10)&"   \(f(x,y)\) the partial derivatives with respect to \(x\)
' "&chr(10)&"
' "&chr(10)&"   Is denoted as \(\ frac{\ partial f }{ partial x}\) and with ,
' "&chr(10)&"
```

```
Sheet1 - 3

' "&chr(10)&"   Respect to \ ( y\) as \(\ frac {\ partial f }{\ partial ,y }\)
' "&chr(10)&"
' "&chr(10)&"   Examp : \[ funct \[ f( x,y)=x^2y+3xy^3\]
' "&chr(10)&"
' "&chr(10)&"   * Calcu
'
End Sub
Sub Macro6()
'
' Macro6 Macro
'
' "&chr(10)&"   \(f(x,y)\) the partial derivatives with respect to \(x\)
' "&chr(10)&"
' "&chr(10)&"   Is denoted as \(\ frac{\ partial f }{ partial x}\) and with ,
' "&chr(10)&"
' "&chr(10)&"   Respect to \ ( y\) as \(\ frac {\ partial f }{\ partial ,y }\)
' "&chr(10)&"
' "&chr(10)&"   Examp : \[ funct \[ f( x,y)=x^2y+3xy^3\]
' "&chr(10)&"
' "&chr(10)&"   * Calcu
'
End Sub
Sub Macro7()
'
' Macro7 Macro
'
' "&chr(10)&"   \( f(x,y)\), the total derivatives \ ( DF \) is given by : \[ DF = \ frac { \ partial
f }{\ partial x }sx +\ frac{ \ partial }{ \ partial y } St \ ]
' "&chr(10)&"
' "&chr(10)&"   Using the previous : \ [ DF = 2xy+ 2y^2)
' "&chr(10)&"
'

'
End Sub
Sub Macro8()
'
' Macro8 Macro
'   1. Fourier series : the Fourier series and cosine function for periodic function \ ( ft)\) with pe
riod ( t) the Fourier series is.
' "&chr(10)&"
' "&chr(10)&"   f(t)= a 0+\ sum ${n= 1}{\ infty}
' "&chr(10)&"
' "&chr(10)&"   \ left + a_ n \ cos \ left \ left + } frac { 2\ pi not }{T}
' "&chr(10)&"
' "&chr(10)&"   \ right ) + b _
'
End Sub
Sub Macro10()
'
' Macro10 Macro
' 0
' "&chr(10)&"   [ Z =\ sqrt{R^ 2+(x-L-X_C)^2}\]
' "&chr(10)&"
' "&chr(10)&"   Where _\(x_L= 2\ pi f L \ Pi .f.c\} ( capacitive reactance ,
' "&chr(10)&"
' "&chr(10)&"   -\(X_C)=\ frac ,{1}{2\ pi.f.c}\}( capacitive reactance.
' "&chr(10)&"
' "&chr(10)&"   -|(fI) is the frequency in Hertz ( z)
' "&chr(10)&"
' "&chr(10)&"   -\(L/) is the inductance  in Hertz ( Hz )
'
End Sub
Sub Macro11()
'
' Macro11 Macro
'   The power factor ,of is defined as the ratio of real power to apparent power , \ [ \ text power fa
ctor ,of )}=\ frac ,{P}{s}\]
' "&chr(10)&"
' "&chr(10)&"   Where : .\(P\)= real power ( w)
' "&chr(10)&"
' "&chr(10)&"   .\(S\\)= apparent power ,( VA)
'
```

```
'
End Sub
Sub Macro12()
'
' Macro12 Macro
'   \[S=\sqt{P^2+Q^2}\]
' "&chr(10)&"
' "&chr(10)&"   .value .real power (\(P\))=500w,
' "&chr(10)&"
' "&chr(10)&"   .reactive power(\Q\))=300VAR
' "&chr(10)&"
' "&chr(10)&"   - calculate apparent power ( s)\[,S=\sqt{P^2t
'

'
End Sub
Sub Macro13()
'
' Macro13 Macro
'
' "&chr(10)&"   -where .
' "&chr(10)&"
' "&chr(10)&"   |(a-O=| frac {1}{T} int- 0^ f(t)\dt)
' "&chr(10)&"
' "&chr(10)&"   .\+a-n = frac {2}{T} int_O^Y f ( t) \ cos\ left ( \ frac { 2\ Pi .n t}{ t } rigth \, D
T have simple square wave function.
'

'
End Sub
Sub Macro14()
'
' Macro14 Macro
'   - the Fourier transform is used to convert a time domain signal into it frequency domain represent
 formula : transform \ F ( \ omega )\( of a continuous signal \ ( f(t) , e^{- j \ omega }\ dt\]
' "&chr(10)&"
' "&chr(10)&"   - where . \( f+ \ omega )\) = Fourier transform of the
'
End Sub
Sub Macro15()
'
' Macro15 Macro
'   - the la place trans is another transformation used to analyse linear time _ invariant system form
ula for the la place transform \ F( S)\) of function \ ( f(t)\) is \[f(s)=\ into -{O} infty } ,  f( t
) ,, e{-st } St \]
' "&chr(10)&"
' "&chr(10)&"   - \( f( s)\)= Laplace transfor
'
End Sub
Sub Macro16()
'
' Macro16 Macro
'   \|[ | dot { x}(t}=Ax(t)+By(t)\]\[y(t)=(x(t)+du(t)\]
' "&chr(10)&"
' "&chr(10)&"   Where :
' "&chr(10)&"
' "&chr(10)&"   -|(x(t)\)= state vector
' "&chr(10)&"
' "&chr(10)&"   .|(u(t)\)= Input vector
' "&chr(10)&"
' "&chr(10)&"   .\ (y( t) \)= output vector .
' "&chr(10)&"
' "&chr(10)&"   .(A\)= System .
' "&chr(10)&"
' "&chr(10)&"   .\(B\)= input matrix .
' "&chr(10)&"
' "&chr(10)&"   .|(C\) = Output matrix .
' "&chr(10)&"
' "&chr(10)&"   .\( D \ )
'
End Sub
Sub Macro17()
```

```
Sheet1 - 5

'
' Macro17 Macro
'   1. DC machines : speed ( n ) the speed of DC motor can be calculated using formula \[N=\ frac { V-
1\ CDOT -R}{ CDOT \ Phi }\]
' "&chr(10)&"
' "&chr(10)&"   - where \ ( N\ ) = speed in Rpm ( revolution perminute .
' "&chr(10)&"
' "&chr(10)&"   - \ ( N\)= supply voltage ( v ) ,
' "&chr(10)&"
' "&chr(10)&"   -\(i\)= armature curr
'
End Sub
Sub Macro18()
'
' Macro18 Macro
'   14*. Mass balance equation : the general mass balance equation can expressed as :
' "&chr(10)&"
' "&chr(10)&"   \[\ text { input }-\ text { output }+\ { generation } \ text  consumption}=\ text { ac
cumulation \ ]
' "&chr(10)&"
'

'
End Sub
Sub Macro19()
'
' Macro19 Macro
'   - for a steady state process ( where accumulation is zero the equation simplified to \[\ text { in
put}\ text { output}\tezt Generation}-\ text { consumption}=\]
'

'
End Sub
Sub Macro20()
'
' Macro20 Macro
'   - for a steady state process ( where accumulation is zero the equation simplified to \[\ text { in
put}\ text { output}\tezt Generation}-\ text { consumption}=\]
'

'
End Sub
Sub Macro21()
'
' Macro21 Macro
' 14.1. master  derivatives : electrical derivatives for a simple electrical circuit with an induction
 ,\(L\) and  a resistor \( R\/ the  voltage across the inductance can be by : \ [ V-L { L\ frac {Di}{S
t}\]
'

' "&chr(10)&"Where \( v-L)= voltage accross the inductor.
'
End Sub
Sub Macro22()
'
' Macro22 Macro
'   Eingenvalue  analysis for a system represented by a matrix the eingenvalue can indicate stability
,if all aigenvalue have negative real part  the involved finding a lyapunov ,( function \(V(x)\) , suc
h that \(V(X)>0\) and ,,\(\dot{(V)(X)<O\) for stabilit
'
End Sub
Sub Macro23()
'
' Macro23 Macro
'   - r esponse request get ,( f" http:// API electricity meter comparable ,/ { meter _ I'd  "} return
 response .jsob ( )
'

'
End Sub
Sub Macro25()
'
' Macro25 Macro
```

```
Sheet1 - 6

'   _1 force balance the net force acting on the system,express as \F-{\text { net }}=F-{\ text { pneu
matic}}++ ,
' "&chr(10)&"
' "&chr(10)&"   F-{\text { hydraulic }}- , F {\ text { damping }}-F{\ text ( inertial }}
'

'
End Sub
Sub Macro26()
'
' Macro26 Macro
'   To derive the relationship force ,motion. ,power ,energy .
' "&chr(10)&"
' "&chr(10)&"   \[F= m\ CDOT a \ ] where.
' "&chr(10)&"
' "&chr(10)&"   .\(F\) = force ( N) , | \ ( m \)= mass ( kg ) |\(a)= acceleration ,( m/s.s)
'

'
End Sub
Sub Macro27()
'
' Macro27 Macro
'   Kinetic energy ,( k.E) is the energy of an object du it's motion .
' "&chr(10)&"
' "&chr(10)&"   \[K.E= \frac {I}{2}.m.V^2\..
' "&chr(10)&"
'

'
End Sub
Sub Macro28()
'
' Macro28 Macro
'   Example: Grades: [70,75,80,85,90][70, 75, 80, 85, 90], N=5N = 5:
' "&chr(10)&"   1. Mean:
' "&chr(10)&"
' "&chr(10)&"   μ=70+75+80+85+905=80.\mu = \frac{70 + 75 + 80 + 85 + 90}{5} = 80.
' "&chr(10)&"   2. Variance:
' "&chr(10)&"
' "&chr(10)&"   s2=(70-80)2+(75-80)2+(80-80)2+(85-80)2+(90-80)25=50.\sigma^2 = \frac{(70-80)^2 + (75-8
0
'
End Sub
Sub Macro29()
'
' Macro29 Macro
' a) Energy in Capacitors
'

' "&chr(10)&"Formula: $$ E = \frac{1}{2} C V^2 $$ Where:
' "&chr(10)&"· CC: Capacitance (Farads),
' "&chr(10)&"· VV: Voltage (Volts).
'

' "&chr(10)&"Example: For a 10 μF10 \, \mu F capacitor with V=240VV = 240V: $$ E = \frac{1}{2} \times
10 \times 10^{-6} \times 240^2 = 0.288
'
End Sub
Sub Macro30()
'
' Macro30 Macro
'
' "&chr(10)&"   B=?0Tc(t) dt,B = \int_0^T c(t) \, dt,
' "&chr(10)&"
' "&chr(10)&"   where c(t)c(t): cost rate over time tt.
' "&chr(10)&"
' "&chr(10)&"   Example: For c(t)=200-20tc(t) = 200 - 20t over [0,5][0, 5]:
' "&chr(10)&"   1. Compute:
' "&chr(10)&"
' "&chr(10)&"   \[ B = \int_0^5 (200 - 20t) \, dt = \left[200t - 10t2\right]_05. \]
' "&chr(10)&"   2. Result:
' "&chr(10)&"
```

```
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'
End Sub
Sub Macro31()
'
' Macro31 Macro
'   For time-dependent power P(t)P(t), energy is: $$ E = \int_{t_1}^{t_2} P(t) \, dt $$. If P(t)=100si
n?(2pt)P(t) = 100 \sin(2\pi t), calculate energy over t=0t = 0 to t=1st = 1s: $$ E = \int_0^1 100 \sin
(2\pi t) \, dt = \left[-\frac{100}{2\pi} \cos(2\pi t)\
'
End Sub
Sub Macro32()
'
' Macro32 Macro
' 5. Predictive Analytics for Crime Prevention
' "&chr(10)&"Using linear regression to predict crime patterns:
' "&chr(10)&"
' "&chr(10)&"y=mx+b,y = mx + b,
' "&chr(10)&"where:
' "&chr(10)&"· yy: Predicted crime rate,
'
End Sub
Sub Macro33()
'
' Macro33 Macro
' Example: If m=0.02 crimes/personm = 0.02 \, \text{crimes/person}, b=10b = 10:
' "&chr(10)&"1. For x=1000x = 1000:
' "&chr(10)&"
' "&chr(10)&"y=0.02·1000+10=30 crimes.y = 0.02 \cdot 1000 + 10 = 30 \, \text{crimes}.
'

'
End Sub
Sub Macro34()
'
' Macro34 Macro
' Applications in Crime Resolution and Prevention
' "&chr(10)&"1. Forensic Investigations:
' "&chr(10)&"o Use ballistic and decay models to reconstruct crime scenes.
' "&chr(10)&"2. Crime Scene Management:
' "&chr(10)&"o Employ area estimation to secure and document crime perimeters.
' "&chr(10)&"3. Predictive
'
End Sub
Sub Macro35()
'
' Macro35 Macro
' 1. Evidence Decay Over Time Using Exponential Models
' "&chr(10)&"Physical evidence, such as DNA or chemical residues, decays over time, which can be model
ed using exponential decay:
' "&chr(10)&"
' "&chr(10)&"C(t)=C0e-?t,C(t) = C_
'
End Sub
Sub Macro36()
'
' Macro36 Macro
'
' "&chr(10)&"y57.7-0.27=57.43 m.y \approx 57.7 - 0.27 = 57.43 \, \text{m}.
' "&chr(10)&"3. Area Estimation for Crime Scene Management
' "&chr(10)&"Using calculus, calculate the area of irregular crime scene perimeters. Divide the bounda
ry into segments described by functions, and integ
'
End Sub
Sub Macro37()
'
' Macro37 Macro
' 4. Surveillance Analysis Using Camera Rotation
' "&chr(10)&"The angular velocity of a surveillance camera can be modeled as:
' "&chr(10)&"
' "&chr(10)&"?(t)=?t+12at2,\theta(t) = \omega t + \frac{1}{2} \alpha t^2,
' "&chr(10)&"where:
' "&chr(10)&"· ?(t)\theta(t): Angle rotated,
' "&chr(10)&"· ?\omega: Initial angular vel
```

```
Sheet1 - 8

'
End Sub
Sub Macro38()
'
' Macro38 Macro
' 1. Management Information Systems in Policing
' "&chr(10)&"Background:
' "&chr(10)&"· Management Information Systems (MIS) in policing are designed to collect, analyze, and
disseminate crime data for decision-making and resource allocation.
' "&chr(10)&"· Applications include crime mappi
'
End Sub
Sub Macro39()
'
' Macro39 Macro
' Applied Policing and Crime Resolution
'
End Sub
Sub Macro40()
'
' Macro40 Macro
' 2. Investigative Techniques
' "&chr(10)&"•?Key Concepts:
' "&chr(10)&"o Conducting preliminary investigations.
' "&chr(10)&"o Using surveillance and undercover operations.
'

'
End Sub
Sub Macro41()
'
' Macro41 Macro
' 3. Evidence Handling and Analysis
' "&chr(10)&"•?Principles:
' "&chr(10)&"o Proper collection, labeling, and storage of evidence.
'

'
End Sub
Sub Macro42()
'
' Macro42 Macro
' 4. Legal Framework
' "&chr(10)&"•?Key Topics:
' "&chr(10)&"o Understanding the Criminal Procedure Act and Evidence Act.
'

'
End Sub
Sub Macro43()
'
' Macro43 Macro
' Applications in Law Enforcement
' "&chr(10)&"1. Forensic Investigation:
' "&chr(10)&"o Analyze evidence to reconstruct crime scenes.
' "&chr(10)&"2. Criminal Profiling:
' "&chr(10)&"o Use psychological and behavioral analysis to identify suspects.
' "&chr(10)&"3. Community Engagement:
'

'
End Sub
Sub Macro44()
'
' Macro44 Macro
' 3. Area Estimation for Crime Scene Management
' "&chr(10)&"Using calculus, calculate the area of irregular crime scene perimeters. Divide the bounda
ry into segments described by functions, and integrate:
' "&chr(10)&"
' "&chr(10)&"A=?x1x2y(x) dx.A = \int_{x_1}^{x_2} y(x) \, dx.
'

'
```

```
Sheet1 - 9

End Sub
Sub Macro45()
'
' Macro45 Macro
' 5. Predictive Analytics for Crime Prevention
' "&chr(10)&"Using linear regression to predict crime patterns:
' "&chr(10)&"
' "&chr(10)&"y=mx+b,y = mx + b,
' "&chr(10)&"where:
' "&chr(10)&"•?yy: Predicted crime rate,
' "&chr(10)&"•?xx: Variable (e.g., population density),
' "&chr(10)&"•?mm: Slope of the trendline,
' "&chr(10)&"•?bb: Intercept.
'

'
    ActiveWindow.ActivePane.VerticalPercentScrolled = -145
End Sub
Sub Macro46()
'
' Macro46 Macro
' 5. Predictive Analytics for Crime Prevention
' "&chr(10)&"Using linear regression to predict crime patterns:
' "&chr(10)&"
' "&chr(10)&"y=mx+b,y = mx + b,
' "&chr(10)&"where:
' "&chr(10)&"•?yy: Predicted crime rate,
' "&chr(10)&"•?xx: Variable (e.g., population density),
' "&chr(10)&"•?mm: Slope of the trendline,
' "&chr(10)&"•?bb: Intercept.
'

'
End Sub
Sub Macro47()
'
' Macro47 Macro
' 2. Incident Collision Scenarios
' "&chr(10)&"Background:
' "&chr(10)&"•?Focuses on investigating road traffic collisions to determine causes and prevent future
 incidents.
' "&chr(10)&"•?Includes analyzing human, vehicle, and environmental factors.
'

'
    ActiveWindow.ActivePane.SmallScroll Down:=23
End Sub
Sub Macro48()
'
' Macro48 Macro
' 2. Incident Collision Scenarios
' "&chr(10)&"Background:
' "&chr(10)&"•?Focuses on investigating road traffic collisions to determine causes and prevent future
 incidents.
' "&chr(10)&"•?Includes analyzing human, vehicle, and environmental factors.
'

'
End Sub
Sub Macro49()
'
' Macro49 Macro
' 4. Community Policing and Communication Skills
' "&chr(10)&"Background:
' "&chr(10)&"•?Community policing emphasizes collaboration between police and communities to solve pro
blems and build trust.
' "&chr(10)&"•?Effective communication skills are essential for engaging with diverse populati
'
End Sub
Sub Macro50()
'
' Macro50 Macro
' 5. Operational Performance in Traffic Management
```

```
Sheet1 - 10

' "&chr(10)&"Background:
' "&chr(10)&"•?Traffic management involves optimizing road safety and flow through enforcement and edu
cation.
' "&chr(10)&"•?Operational performance measures include response times and accident reduction rates.
' "&chr(10)&"Exper
'
End Sub
Sub Macro51()
'
' Macro51 Macro
' 6. Principles of Police Investigation
' "&chr(10)&"Background:
' "&chr(10)&"•?Investigative principles include evidence preservation, chain of custody, and impartial
ity.
' "&chr(10)&"•?Focuses on systematic approaches to solving crimes.
' "&chr(10)&"Experimental Applications:
' "&chr(10)&"•?Conduct mock crime scen
'
End Sub
Sub Macro52()
'
' Macro52 Macro
' 7. Study Material for Police Firearms
' "&chr(10)&"Background:
' "&chr(10)&"•?Covers firearm handling, safety, and competency testing.
' "&chr(10)&"•?Includes theoretical knowledge and practical training.
' "&chr(10)&"Experimental Applications:
' "&chr(10)&"•?Practice firearm handling and target shooting in contro
'
End Sub
Sub Macro53()
'
' Macro53 Macro
' 1. Management Information Systems (MIS): Optimizing Police Patrol
' "&chr(10)&"•?Crime Hotspot Modeling Using Integrals: Crime density in a region can be modeled as a d
ensity function f(x,y)f(x, y), where xx and yy are spatial coordinates.
' "&chr(10)&"o Total crime density in a
'
End Sub
Sub Macro54()
'
' Macro54 Macro
'
' "&chr(10)&"D=?02p?02(r2) r dr d?.D = \int_0^{2\pi} \int_0^2 (r^2) \, r \, dr \, d\theta.
' "&chr(10)&"2. Compute:
' "&chr(10)&"\[ D = \int_0^{2\pi} \int_0^2 r^3 \, dr \, d\theta = \int_0^{2\pi} \left[\frac{r4}{4}\rig
ht]_02 d\theta = \int_0^{2\pi} 4 d\theta = 8\pi. \]
'


'
End Sub
Sub Macro55()
'
' Macro55 Macro
' 2. Incident Collision Scenarios
' "&chr(10)&"•?Projectile Motion and Trajectories: Use derivatives to determine speed and angles durin
g a collision or vehicle impact.
' "&chr(10)&"o Position as a function of time s(t)s(t):
' "&chr(10)&"
' "&chr(10)&"v(t)=dsdt,a(t)=dvdt.v(t) = \frac{ds}{dt}, \quad a(
'
End Sub
Sub Macro56()
'
' Macro56 Macro
' Example: If s(t)=5t2+2ts(t) = 5t^2 + 2t, calculate velocity and acceleration:
' "&chr(10)&"1. Velocity:
' "&chr(10)&"
' "&chr(10)&"v(t)=dsdt=10t+2.v(t) = \frac{ds}{dt} = 10t + 2.
' "&chr(10)&"2. Acceleration:
' "&chr(10)&"
' "&chr(10)&"a(t)=dvdt=10 m/s2.a(t) = \frac{dv}{dt} = 10 \, \text{m/s}^2.
'
```

```
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'
End Sub
Sub Macro57()
'
' Macro57 Macro
' 3. Patrol Research and Route Optimization
' "&chr(10)&"•?Travel Path Optimization Using Integrals: Minimize distance covered by patrol cars alon
g a curve y=f(x)y = f(x).
' "&chr(10)&"o Total patrol distance:
' "&chr(10)&"
' "&chr(10)&"L=?ab1+(dydx)2 dx.L = \int_a^b \sqrt{1 + \left(\frac{dy}{dx}\righ
'
    ActiveWindow.ActivePane.SmallScroll Down:=18
End Sub
Sub Macro58()
'
' Macro58 Macro
' Example: If y=x2y = x^2 and xx ranges from 0 to 1:
' "&chr(10)&"1. Compute dydx=2x\frac{dy}{dx} = 2x, so:
' "&chr(10)&"
' "&chr(10)&"L=?011+(2x)2 dx=?011+4x2 dx.L = \int_0^1 \sqrt{1 + (2x)^2} \, dx = \int_0^1 \sqrt{1 + 4x^
2} \, dx.
' "&chr(10)&"2. Approximate using numerical methods.
'

'
End Sub
Sub Macro59()
'
' Macro59 Macro
' Example: If y=x2y = x^2 and xx ranges from 0 to 1:
' "&chr(10)&"1. Compute dydx=2x\frac{dy}{dx} = 2x, so:
' "&chr(10)&"
' "&chr(10)&"L=?011+(2x)2 dx=?011+4x2 dx.L = \int_0^1 \sqrt{1 + (2x)^2} \, dx = \int_0^1 \sqrt{1 + 4x^
2} \, dx.
' "&chr(10)&"2. Approximate using numerical methods.
'

'
End Sub
Sub Macro60()
'
' Macro60 Macro
' Example: If y=x2y = x^2 and xx ranges from 0 to 1:
' "&chr(10)&"1. Compute dydx=2x\frac{dy}{dx} = 2x, so:
' "&chr(10)&"
' "&chr(10)&"L=?011+(2x)2 dx=?011+4x2 dx.L = \int_0^1 \sqrt{1 + (2x)^2} \, dx = \int_0^1 \sqrt{1 + 4x^
2} \, dx.
' "&chr(10)&"2. Approximate using numerical methods.
'

'
End Sub
Sub Macro61()
'
' Macro61 Macro
' 1. Compute:
' "&chr(10)&"\[ I = \int_0^3 10t^2 \, dt = \left[\frac{10t3}{3}\right]_03 = 90 \, \text{Ns}. \]
'

'
    ActiveWindow.ActivePane.SmallScroll Down:=17
End Sub
Sub Macro62()
'
' Macro62 Macro
' 5. Investigation Principles
' "&chr(10)&"•?Decay of Evidence Using Exponential Models: Biological or chemical evidence decays over
 time, modeled by:
' "&chr(10)&"
' "&chr(10)&"C(t)=C0e-?t,C(t) = C_0 e^{-\lambda t},
' "&chr(10)&"where ?\lambda is the decay rate.
```

```
' "&chr(10)&"Example: For C0=100 ngC_0 = 100 \, \t
'
End Sub
Sub Macro63()
'
' Macro63 Macro
' 6. Firearm Ballistics
' "&chr(10)&"•?Trajectory Calculations: The path of a bullet can be calculated using physics and deriv
atives:
' "&chr(10)&"o Horizontal range:
' "&chr(10)&"
' "&chr(10)&"R=v02sin?2?g,R = \frac{v_0^2 \sin 2\theta}{g},
' "&chr(10)&"where v0v_0: initial velocity, ?\theta: angle, g=9.8 m/s2g =
'
    ActiveWindow.ActivePane.SmallScroll Down:=40
End Sub
Sub Macro64()
'
' Macro64 Macro
' Example: If v0=300 m/sv_0 = 300 \, \text{m/s} and ?=45°\theta = 45^\circ:
' "&chr(10)&"1. Range:
' "&chr(10)&"
' "&chr(10)&"R=3002sin?90°9.8=900009.89183.67 m.R = \frac{300^2 \sin 90^\circ}{9.8} = \frac{90000}{9.8
} \approx 9183.67 \, \text{m}.
'

'
    ActiveWindow.ActivePane.SmallScroll Down:=20
End Sub
Sub Macro65()
'
' Macro65 Macro
' Example: If v0=300 m/sv_0 = 300 \, \text{m/s} and ?=45°\theta = 45^\circ:
' "&chr(10)&"1. Range:
' "&chr(10)&"
' "&chr(10)&"R=3002sin?90°9.8=900009.89183.67 m.R = \frac{300^2 \sin 90^\circ}{9.8} = \frac{90000}{9.8
} \approx 9183.67 \, \text{m}.
'

'
    ActiveWindow.ActivePane.LargeScroll Down:=1
    ActiveWindow.ActivePane.VerticalPercentScrolled = 0
End Sub
Sub Macro9()
'
' NewMacros1.Macro9 Macro
'
' "&chr(10)&"    .\[ R-{\ text t{ total }}= R1+R2+R3\]
' "&chr(10)&"
' "&chr(10)&"    . Substituting the values \[ R - { \ text { total }}= 10\.\ text , { ohms }+ 20\, tex
t{ ohms}+30\, text {ohms}\], calculating ,\[ R - { \ text { total /}} = 60\\ text { ohm }\]
'

'


End Sub
Sub Macro1()
'
' Macro1 Macro
' Background on Radio and TV Systems
' "&chr(10)&"       · Radio Systems:
' "&chr(10)&"       o Focus on transmitting and receiving electromagnetic signals using frequencies in
 the AM/FM spectrum.
' "&chr(10)&"       o Applications: Communicatio
'
End Sub
Sub frm1()
'
' frm1 Macro
' VERSION 5.00
' "&chr(10)&"Begin {C62A69F0-16DC-11CE-9E98-00AA00574A4F} UserForm1
' "&chr(10)&"   Caption         =   "UserForm1"
' "&chr(10)&"   ClientHeight    =   9792
```

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' "&chr(10)&"   ClientLeft      =   108
' "&chr(10)&"   ClientTop       =   456
' "&chr(10)&"   ClientWidth     =   20004
' "&chr(10)&"   OleObjectBlob   =   "UserForm
'

End Sub
Sub Macro2()
'
' Macro2 Macro
' VERSION 5.00
' "&chr(10)&"Begin {C62A69F0-16DC-11CE-9E98-00AA00574A4F} UserForm1
' "&chr(10)&"   Caption         =   "UserForm1"
' "&chr(10)&"   ClientHeight    =   9792
' "&chr(10)&"   ClientLeft      =   108
' "&chr(10)&"   ClientTop       =   456
' "&chr(10)&"   ClientWidth     =   20004
' "&chr(10)&"   OleObjectBlob   =   "UserForm
'
End Sub
Sub Macro3()
'
' Macro3 Macro
' m(t)=Ac(1+macos??mt)cos??ct,m(t) = A_c(1 + m_a \cos \omega_m t) \cos \omega_c t,
' "&chr(10)&"       where mam_a: modulation index, AcA_c: carrier amplitude, ?c\omega_c: carrier frequ
ency, ?m\omega_m: message frequency.
' "&chr(10)&"       2. FM S
'
End Sub
Sub Macro4()
'
' Macro4 Macro
' 2. FM Signal Equation:
' "&chr(10)&"
' "&chr(10)&"       f(t)=cos?(?ct+ßsin??mt),f(t) = \cos (\omega_c t + \beta \sin \omega_m t),
' "&chr(10)&"       where ß\beta: modulation index.
' "&chr(10)&"       · Demodulation:
'
End Sub
Sub Macro5()
'
' Macro5 Macro
' 2. FM Signal Equation:
' "&chr(10)&"
' "&chr(10)&"       f(t)=cos?(?ct+ßsin??mt),f(t) = \cos (\omega_c t + \beta \sin \omega_m t),
' "&chr(10)&"       where ß\beta: modulation index.
' "&chr(10)&"       · Demodulation:
'
End Sub
Sub Macro6()
'
' Macro6 Macro
'
' "&chr(10)&"       Example Calculation: For Ac=5 VA_c = 5 \, \text{V}, Am=2 VA_m = 2 \, \text{V}, fc=
100 kHzf_c = 100 \, \text{kHz}, fm=1 kHzf_m = 1 \, \text{kHz}:
' "&chr(10)&"       1. Modulation Index:
' "&chr(10)&"
' "&chr(10)&"       ma=AmAc=25
'
End Sub
Sub Macro7()
'
' Macro7 Macro
'
' "&chr(10)&"       m(t)=5[1+0.4cos?(2p·1000t)]cos?(2p·100000t).m(t) = 5 [1 + 0.4 \cos(2\pi \cdot 1000
 t)] \cos(2\pi \cdot 100000 t).
' "&chr(10)&"       2. Frequency Modulation (FM):
' "&chr(10)&"       The FM signal is expressed as:
'
End Sub
Sub Macro8()
'
' Macro8 Macro
```

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'
' "&chr(10)&"       m(t)=5[1+0.4cos?(2p·1000t)]cos?(2p·100000t).m(t) = 5 [1 + 0.4 \cos(2\pi \cdot 1000
 t)] \cos(2\pi \cdot 100000 t).
' "&chr(10)&"       2. Frequency Modulation (FM):
' "&chr(10)&"       The FM signal is expressed as:
'
End Sub
Sub Macro9()
'
' Macro9 Macro
'
' "&chr(10)&"       m(t)=5[1+0.4cos?(2p·1000t)]cos?(2p·100000t).m(t) = 5 [1 + 0.4 \cos(2\pi \cdot 1000
 t)] \cos(2\pi \cdot 100000 t).
' "&chr(10)&"       2. Frequency Modulation (FM):
' "&chr(10)&"       The FM signal is expressed as:
'
End Sub
Sub Macro10()
'
' Macro10 Macro
'
' "&chr(10)&"       m(t)=5[1+0.4cos?(2p·1000t)]cos?(2p·100000t).m(t) = 5 [1 + 0.4 \cos(2\pi \cdot 1000
 t)] \cos(2\pi \cdot 100000 t).
' "&chr(10)&"       2. Frequency Modulation (FM):
' "&chr(10)&"       The FM signal is expressed as:
'
End Sub
Sub Macro11()
'
' Macro11 Macro
'
' "&chr(10)&"       m(t)=5[1+0.4cos?(2p·1000t)]cos?(2p·100000t).m(t) = 5 [1 + 0.4 \cos(2\pi \cdot 1000
 t)] \cos(2\pi \cdot 100000 t).
' "&chr(10)&"       2. Frequency Modulation (FM):
' "&chr(10)&"       The FM signal is expressed as:
'
End Sub
Sub Macro12()
'
' Macro12 Macro
'
' "&chr(10)&"       m(t)=5[1+0.4cos?(2p·1000t)]cos?(2p·100000t).m(t) = 5 [1 + 0.4 \cos(2\pi \cdot 1000
 t)] \cos(2\pi \cdot 100000 t).
' "&chr(10)&"       2. Frequency Modulation (FM):
' "&chr(10)&"       The FM signal is expressed as:
'
End Sub
Sub Macro13()
'
' Macro13 Macro
'
' "&chr(10)&"       The intensity of colors is calculated as:
' "&chr(10)&"
' "&chr(10)&"       Idisplay=R·gainR+G·gainG+B·gainB.I_{\text{display}} = R \cdot \text{gain}_R + G \c
dot \text{gain}_G + B \cdot \text{gain}_B.
'
    Selection.Copy
End Sub
Sub Macro14()
'
' Macro14 Macro
' Video Signals:
' "&chr(10)&"       · Luminance (YY) is:
' "&chr(10)&"
' "&chr(10)&"       Y=0.299R+0.587G+0.114B.Y = 0.299R + 0.587G + 0.114B.
' "&chr(10)&"       · Chrominance (CC) represents color differences.
'
End Sub
Sub Macro15()
'
' Macro15 Macro
' Video Signals:
' "&chr(10)&"       · Luminance (YY) is:
```

```
' "&chr(10)&"
' "&chr(10)&"       Y=0.299R+0.587G+0.114B.Y = 0.299R + 0.587G + 0.114B.
' "&chr(10)&"       · Chrominance (CC) represents color differences.
'
End Sub
Sub Macro16()
'
' Macro16 Macro
' Video Signals:
' "&chr(10)&"       · Luminance (YY) is:
' "&chr(10)&"
' "&chr(10)&"       Y=0.299R+0.587G+0.114B.Y = 0.299R + 0.587G + 0.114B.
' "&chr(10)&"       · Chrominance (CC) represents color differences.
'
    Selection.MoveDown Unit:=wdLine, Count:=203
End Sub
Sub Macro17()
'
' Macro17 Macro
' Video Signals:
' "&chr(10)&"       · Luminance (YY) is:
' "&chr(10)&"
' "&chr(10)&"       Y=0.299R+0.587G+0.114B.Y = 0.299R + 0.587G + 0.114B.
' "&chr(10)&"       · Chrominance (CC) represents color differences.
'
End Sub
Sub Macro18()
'
' Macro18 Macro
'
' "&chr(10)&"       Ft=aDt-1+(1-a)Ft-1,F_t = \alpha D_{t-1} + (1 - \alpha) F_{t-1},
' "&chr(10)&"       where:
' "&chr(10)&"       · FtF_t: Forecast for current period,
' "&chr(10)&"       · a\alpha: Smoothing constant,
' "&chr(10)&"       · Dt-1
'
End Sub
Sub Macro19()
'
' Macro19 Macro
'
' "&chr(10)&"       Ft=aDt-1+(1-a)Ft-1,F_t = \alpha D_{t-1} + (1 - \alpha) F_{t-1},
' "&chr(10)&"       where:
' "&chr(10)&"       · FtF_t: Forecast for current period,
' "&chr(10)&"       · a\alpha: Smoothing constant,
' "&chr(10)&"       · Dt-1
'
End Sub
Sub Macro20()
'
' Macro20 Macro
'
' "&chr(10)&"       Ft=aDt-1+(1-a)Ft-1,F_t = \alpha D_{t-1} + (1 - \alpha) F_{t-1},
' "&chr(10)&"       where:
' "&chr(10)&"       · FtF_t: Forecast for current period,
' "&chr(10)&"       · a\alpha: Smoothing constant,
' "&chr(10)&"       · Dt-1
'
    Selection.Copy
End Sub
Sub Macro21()
'
' Macro21 Macro
' F1=0.3(120)+0.7(100)=36+70=106 units.F_1 = 0.3(120) + 0.7(100) = 36 + 70 = 106 \, \text{units}.
' "&chr(10)&"       Advanced Calculation: Budget Optimization
' "&chr(10)&"       Budget allocation can be modeled using linear programming to maximize
'
    Selection.Copy
End Sub
Sub Macro22()
'
' Macro22 Macro
'
```

```
' "&chr(10)&"       a11x1+a12x2=b1,x1,x2=0,a_{11}x_1 + a_{12}x_2 \leq b_1, \quad x_1, x_2 \geq 0,
' "&chr(10)&"       where:
' "&chr(10)&"       · c1,c2c_1, c_2: Contribution per unit,
' "&chr(10)&"       · aija_{ij}: Resource consumptio
'
    Selection.Copy
End Sub
Sub Macro23()
'
' Macro23 Macro
' 2. Supervision in Industrial Environments
' "&chr(10)&"       Efficiency Metrics
' "&chr(10)&"       Evaluate employee performance using:
' "&chr(10)&"
' "&chr(10)&"       Efficiency=OutputStandard Output×100.\text{Efficiency} = \fr
'
    Selection.Copy
End Sub
Sub Macro24()
'
' Macro24 Macro
' Efficiency=80100×100=80%.\text{Efficiency} = \frac{80}{100} \times 100 = 80\%.
' "&chr(10)&"       3. Organization in Industrial Operations
' "&chr(10)&"       Workflow Optimization Using Queue Theory
' "&chr(10)&"       Queue theory assesses
'
    Selection.Copy
End Sub
Sub Macro25()
'
' Macro25 Macro
'
' "&chr(10)&"       Lq=?2μ(μ-?),L_q = \frac{\lambda^2}{\mu(\mu - \lambda)},
' "&chr(10)&"       where:
' "&chr(10)&"       · ?\lambda: Arrival rate,
' "&chr(10)&"       · μ\mu: Service rate.
' "&chr(10)&"       Example: Given ?=5 jobs/hour\lambda
'
    Selection.Copy
End Sub
Sub Macro26()
'
' Macro26 Macro
'
' "&chr(10)&"       Lq=528(8-5)=25241.04 jobs.L_q = \frac{5^2}{8(8-5)} = \frac{25}{24} \approx 1.04 \,
 \text{jobs}.
' "&chr(10)&"       4. Related Experimental Topics
' "&chr(10)&"       Quality Control: Six Sigma
' "&chr(10)&"       Calculate proces
'
    Selection.Copy
End Sub
Sub Macro27()
'
' Macro27 Macro
'   Z=X-μs,Z = \frac{\text{X} - \mu}{\sigma},
' "&chr(10)&"       where:
' "&chr(10)&"       · X\text{X}: Observed value,
' "&chr(10)&"       · μ\mu: Mean,
' "&chr(10)&"       · s\sigma: Standard deviation.
' "&chr(10)&"       Application
'
    Selection.Copy
End Sub
Sub Macro28()
'
' Macro28 Macro
' o Apply inventory models like Economic Order Quantity (EOQ):
' "&chr(10)&"
' "&chr(10)&"       EOQ=2DSH,EOQ = \sqrt{\frac{2DS}{H}},
' "&chr(10)&"       where DD: Demand, SS: Ordering cost, HH: Holding cost.
' "&chr(10)&"       Would
'
```

```
    Selection.MoveDown Unit:=wdLine, Count:=92
    Selection.Copy
End Sub
Sub Macro29()
'
' Macro29 Macro
'
' "&chr(10)&"       o Using models like Economic Order Quantity (EOQ) to optimize inventory:
' "&chr(10)&"
' "&chr(10)&"       EOQ=2DSH,EOQ = \sqrt{\frac{2DS}{H}},
' "&chr(10)&"       where DD is demand, SS is setup cost, and HH is holding cost.
'
    Selection.MoveDown Unit:=wdLine, Count:=88
    Selection.Copy
End Sub
Sub Macro30()
'
' Macro30 Macro
'
' "&chr(10)&"       1. Personality Training
' "&chr(10)&"       Background:
' "&chr(10)&"       · Focuses on developing interpersonal skills, emotional intelligence, and self-awa
reness.
' "&chr(10)&"       · Aims to enhance communication, leadership, and
'
    Selection.MoveDown Unit:=wdLine, Count:=226
    ActiveWindow.ActivePane.VerticalPercentScrolled = -171
    ActiveWindow.ActivePane.SmallScroll Down:=82
    Selection.Copy
End Sub
Sub Macro31()
'
' Macro31 Macro
' · Technical Drawing: Reading, interpreting, and confirming designs.
' "&chr(10)&"       · Wiring and Testing:
' "&chr(10)&"       o Installing circuits (up to 1000 volts AC/1500 volts DC).
' "&chr(10)&"       o Testing systems for compliance w
'
    Selection.Copy
End Sub
Sub Macro32()
'
' Macro32 Macro
' o Total impedance: $$ Z = \sqrt{R^2 + (X_L - X_C)^2}, \text{ where } X_L = 2\pi f L \text{ and } X_C
 = \frac{1}{2\pi f C}. $$
' "&chr(10)&"       · Power:
' "&chr(10)&"       o For AC systems: $$ P = VI \cos{\phi}, \text{ where } \cos{\phi} \text{
'
    Selection.Copy
End Sub
Sub Macro33()
'
' Macro33 Macro
'
' "&chr(10)&"       · Energy in Capacitors:
' "&chr(10)&"       o Stored energy: $$ E = \frac{1}{2}CV^2. $$
' "&chr(10)&"       · Fault Current:
' "&chr(10)&"       o Use Ohm’s Law to compute fault current: $$ I = \frac{V}{Z}, \text{ where
'
    Selection.MoveDown Unit:=wdLine, Count:=52
    Selection.Copy
End Sub
Sub Macro34()
'
' Macro34 Macro
'   Key Role: Integrals help analyze energy storage, system behavior over time, and power distribution
 in circuits.
' "&chr(10)&"       · Energy Stored in Capacitors: $$ E = \frac{1}{2} C V^2 $$ Example: For a capacito
r with C=10μFC = 10 \mu F and V=230V
'
    Selection.Copy
End Sub
Sub Macro35()
```

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'
' Macro35 Macro
' 2645 \, \text{Joules}. $$
' "&chr(10)&"       · Total Energy in a Time Period (AC Systems): Calculate energy consumption using:
$$ E = \int P(t) \, dt $$. If P(t)=5sin?(2pt)P(t) = 5 \sin(2\pi t), solve: $$ E = \int_0^{1} 5 \sin(2\
pi t) \, dt. $$
'
    Selection.Copy
End Sub
Sub Macro36()
'
' Macro36 Macro
'
' "&chr(10)&"       · Induced Voltage in Inductors: Voltage across an inductor is: $$ V(t) = L \frac{d
i(t)}{dt}. $$ Example: With L=5HL = 5H and i(t)=t2i(t) = t^2: $$ V(t) = 5 \times \frac{d(t^2)}{dt} = 1
0t. $$ At \( t = 2s, V(2) = 10 \times 2 = 20V. $$
'
    Selection.MoveDown Unit:=wdLine, Count:=130
End Sub
Sub Macro37()
'
' Macro37 Macro
' o Use derivatives to study transient behaviors or integrals for analyzing energy losses: $$ i(t) = C
 \frac{dV}{dt} $$ $$ V(t) = L \frac{di}{dt} $$
' "&chr(10)&"       4. Practical Growth Path
' "&chr(10)&"       Completing these work experiences e
'
    Selection.MoveDown Unit:=wdLine, Count:=35
    Selection.Copy
End Sub
Sub Macro38()
'
' Macro38 Macro
' Example: For a 2H2H inductor carrying I=5AI = 5A: $$ E = \frac{1}{2} \times 2 \times 5^2 = 25 \, \te
xt{Joules}. $$
' "&chr(10)&"       c) Cumulative Power Consumption
' "&chr(10)&"       For time-dependent power P(t)P(t), energy is: $$ E = \int_{t
'
    Selection.Copy
End Sub
Sub Macro39()
'
' Macro39 Macro
'
' "&chr(10)&"       For time-dependent power P(t)P(t), energy is: $$ E = \int_{t_1}^{t_2} P(t) \, dt $
$. If P(t)=100sin?(2pt)P(t) = 100 \sin(2\pi t), calculate energy over t=0t = 0 to t=1st = 1s: $$ E = \
int_0^1 100 \sin(2\pi t) \, dt = \left[-\frac{100}{2\pi} \cos(2\pi
'
    Selection.MoveDown Unit:=wdLine, Count:=19
    Selection.Copy
End Sub
Sub Macro40()
'
' Macro40 Macro
'
' "&chr(10)&"       Example: For L=5HL = 5H, i(t)=t2i(t) = t^2: $$ V(t) = 5 \cdot \frac{d(t^2)}{dt} =
10t. $$ At \( t = 3s, V = 10 \cdot 3 = 30V. $$
' "&chr(10)&"       b) Charging of a Capacitor
' "&chr(10)&"       Current through a charging capaci
'
    Selection.Copy
End Sub
Sub Macro41()
'
' Macro41 Macro
'
' "&chr(10)&"       Current through a charging capacitor: $$ i(t) = C \frac{dV(t)}{dt}. $$ For V(t)=12
(1-e-tRC)V(t) = 12(1 - e^{-\frac{t}{RC}}), calculate i(t)i(t): $$ i(t) = C \cdot \frac{d}{dt}[12(1 - e
^{-\frac{t}{RC}})] = \frac{12C}{RC} e^{-\frac{t}{RC}}. $
'
    Selection.MoveDown Unit:=wdLine, Count:=54
    Selection.MoveDown Unit:=wdLine, Count:=15
    Selection.MoveUp Unit:=wdLine, Count:=1
```

```
    Selection.Copy
End Sub
Sub Macro42()
'
' Macro42 Macro
' o Perform lathe, milling, grinding, and jig boring operations (WA015-WA018).
' "&chr(10)&"       o Program and operate CNC machines (WA0113-WA0116).
' "&chr(10)&"       · Mechanical Maintenance:
' "&chr(10)&"       o Diagnose and repair mechan
'
    Selection.MoveDown Unit:=wdLine, Count:=36
    Selection.Copy
End Sub
Sub Macro43()
'
' Macro43 Macro
'
' "&chr(10)&"       o Torque: $$ T = F \cdot r, \text{ where } F \text{ is force and } r \text{ is rad
ius.} $$
' "&chr(10)&"       o Power transmitted in shafts: $$ P = \frac{2\pi \cdot T \cdot N}{60}, \text{ wher
e } N \text{ is rotational speed (RPM).} $$
'
    Selection.Copy
End Sub
Sub Macro44()
'
' Macro44 Macro
'
' "&chr(10)&"       o Use integral calculations to analyze flow rates in hydraulic systems: $$ Q = \in
t v \cdot A \, dt, \text{ where } v \text{ is velocity and } A \text{ is cross-sectional area.} $$
' "&chr(10)&"       · Stress Analysis:
'
    Selection.MoveDown Unit:=wdLine, Count:=128
    Selection.Copy
End Sub
Sub Macro45()
'
' Macro45 Macro
'
' "&chr(10)&"       · Fluid Dynamics:
' "&chr(10)&"       o Analyze flow rates using integrals: $$ Q = \int v \cdot A \, dt $$
' "&chr(10)&"       · Mechanical Stress:
' "&chr(10)&"       o Stress in materials: $$ \sigma = \frac{F}{A}, \text{ wh
'
    Selection.Copy
End Sub
Sub Macro46()
'
' Macro46 Macro
'
' "&chr(10)&"       · Mechanical Stress:
' "&chr(10)&"       o Stress in materials: $$ \sigma = \frac{F}{A}, \text{ where } F = \text{force and
 } A = \text{area.} $$
' "&chr(10)&"       · Torque in Systems:
' "&chr(10)&"       o Torque transmi
'
    Selection.MoveDown Unit:=wdLine, Count:=69
    ActiveWindow.ActivePane.VerticalPercentScrolled = 209
    Selection.Copy
End Sub
Sub Macro47()
'
' Macro47 Macro
'
' "&chr(10)&"       The NCV (National Certificate Vocational) and NATED (National Accredited Technical
 Education Diploma) programs offer specialized modules in electrical engineering, focusing on practica
l and theoretical knowledge in areas like electrical panels
'
    Selection.MoveDown Unit:=wdLine, Count:=43
    Selection.Copy
End Sub
Sub Macro48()
'
```

```
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' Macro48 Macro
' o Panel design and layout.
' "&chr(10)&"       o Circuit breakers and fuses.
' "&chr(10)&"       o Safety standards and regulations.
' "&chr(10)&"       · Experimental Applications:
' "&chr(10)&"       o Assemble and test electrical panels
'
    Selection.MoveDown Unit:=wdLine, Count:=134
End Sub
Sub Macro49()
'
' Macro49 Macro
'
' "&chr(10)&"       · Load Distribution: Use integrals to calculate the total load on an electrical pa
nel:
' "&chr(10)&"
' "&chr(10)&"       Ptotal=?0TP(t) dt,P_{\text{total}} = \int_0^T P(t) \, dt,
' "&chr(10)&"       where P(t)P(t) is the p
'
    Selection.Copy
End Sub
Sub Macro50()
'
' Macro50 Macro
' where P(t)P(t) is the power drawn over time tt.
' "&chr(10)&"       Example: For a panel supplying P(t)=100+20t WP(t) = 100 + 20t \, \text{W} from t=0
 hrt = 0 \, \text{hr} to t=5 hrt = 5 \, \text{hr}:
' "&chr(10)&"       1. Compute:
'
    Selection.MoveDown Unit:=wdLine, Count:=23
    Selection.Copy
End Sub
Sub Macro51()
'
' Macro51 Macro
'
' "&chr(10)&"       Ptotal=(100·5+10·25)-0=750 Wh.P_{\text{total}} = (100 \cdot 5 + 10 \cdot 25) - 0 =
 750 \, \text{Wh}.
' "&chr(10)&"       Electrical Drawing:
'

'
    Selection.MoveDown Unit:=wdLine, Count:=28
    Selection.Copy
End Sub
Sub Macro52()
'
' Macro52 Macro
' · Voltage Drop Across Cables: Voltage drop is modeled as:
' "&chr(10)&"
' "&chr(10)&"       ?V=?0LIR dx,\Delta V = \int_0^L I R \, dx,
' "&chr(10)&"       where II: current, RR: resistance per unit length, LL: total length of wire.
'
    Selection.Copy
End Sub
Sub Macro53()
'
' Macro53 Macro
' where II: current, RR: resistance per unit length, LL: total length of wire.
' "&chr(10)&"       Example: For I=10 A,R=0.5 O/mI = 10 \, \text{A}, R = 0.5 \, \Omega/\text{m}, and L
=20 mL = 20 \, \text{m}:
' "&chr(10)&"       1. Compute:
'
    Selection.Copy
End Sub
Sub Macro54()
'
' Macro54 Macro
' ?V=?02010·0.5 dx=[5x]020.\Delta V = \int_0^{20} 10 \cdot 0.5 \, dx = \left[5x\right]_0^{20}.
' "&chr(10)&"       2. Result:
' "&chr(10)&"
' "&chr(10)&"       ?V=5·20-0=100 V.\Delta V = 5 \cdot 20 - 0 = 100 \, \text{V}.
'
```

```
    Selection.MoveDown Unit:=wdLine, Count:=25
    Selection.Copy
End Sub
Sub Macro55()
'
' Macro55 Macro
' 3. Control Switch Design
' "&chr(10)&"       Application of Calculus:
' "&chr(10)&"       · Switch Response Time: The behavior of a switch under a varying load is represent
ed by its resistance R(t)R(t):
'

'
    Selection.Copy
End Sub
Sub Macro56()
'
' Macro56 Macro
'
' "&chr(10)&"       I(t)=VR(t),where R(t)=R0+kt.I(t) = \frac{V}{R(t)}, \quad \text{where } R(t) = R_0
+ kt.
' "&chr(10)&"       Example: For V=230 V,R0=10 O,k=2 O/s,t=5 sV = 230 \, \text{V}, R_0 = 10 \, \Omega,
 k = 2 \, \Omega/\text{s}, t = 5 \, \text{s}:
'
    Selection.Copy
End Sub
Sub Macro57()
'
' Macro57 Macro
' Example: For V=230 V,R0=10 O,k=2 O/s,t=5 sV = 230 \, \text{V}, R_0 = 10 \, \Omega, k = 2 \, \Omega/\
text{s}, t = 5 \, \text{s}:
' "&chr(10)&"       1. Resistance after 5 s:
' "&chr(10)&"
' "&chr(10)&"       R(5)=10+2·5=20 O.R(5) = 10 +
'
    Selection.Copy
End Sub
Sub Macro58()
'
' Macro58 Macro
'
' "&chr(10)&"       I(5)=23020=11.5 A.I(5) = \frac{230}{20} = 11.5 \, \text{A}.
' "&chr(10)&"       Electrical Drawing:
' "&chr(10)&"       · Design control systems using ladder diagrams.
' "&chr(10)&"       · Include components like rela
'
    Selection.MoveDown Unit:=wdLine, Count:=25
    Selection.Copy
End Sub
Sub Macro59()
'
' Macro59 Macro
'
' "&chr(10)&"       · Refrigeration Cycle Efficiency: Coefficient of Performance (COP) integrates heat
 transfer over a cycle:
' "&chr(10)&"
' "&chr(10)&"       COP=?0TQcold dt?0TW dt,\text{COP} = \frac{\int_0^T Q_{\text{cold}} \, dt}{\int_0^T
 W \
'
    Selection.Copy
End Sub
Sub Macro60()
'
' Macro60 Macro
' where QcoldQ_{\text{cold}}: heat removed, WW: work input.
' "&chr(10)&"       Example: For Qcold=300 J/s,W=100 J/sQ_{\text{cold}} = 300 \, \text{J/s}, W = 100 \
, \text{J/s}, T=10 sT = 10 \, \text{s}:
' "&chr(10)&"       1. Compute:
'
    Selection.Copy
End Sub
Sub Macro61()
'
```

```
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' Macro61 Macro
'
' "&chr(10)&"       COP=?010300 dt?010100 dt=300·10100·10=3.\text{COP} = \frac{\int_0^{10} 300 \, dt}{
\int_0^{10} 100 \, dt} = \frac{300 \cdot 10}{100 \cdot 10} = 3.
' "&chr(10)&"       Electrical Drawing:
' "&chr(10)&"       · Create schematics of refrig
'
    Selection.MoveDown Unit:=wdLine, Count:=93
    Selection.Copy
End Sub
Sub Macro62()
'
' Macro62 Macro
'
' "&chr(10)&"       where A(t)A(t): cross-sectional area of pipe at time tt, v(t)v(t): flow velocity.
' "&chr(10)&"       Example: For A(t)=0.05 m2A(t) = 0.05 \, \text{m}^2 and v(t)=2+0.5t m/sv(t) = 2 + 0
.5t \, \text{m/s} over t=0 st = 0 \, \text{s} to
'
    Selection.Copy
End Sub
Sub Macro63()
'
' Macro63 Macro
' \[ V = \int_0^4 0.05 \cdot (2 + 0.5t) \, dt = 0.05 \left[2t + 0.25t2\right]_04. \]
' "&chr(10)&"       2. Result:
' "&chr(10)&"
' "&chr(10)&"       V=0.05(8+4)=0.6 m3.V = 0.05 (8 + 4) = 0.6 \, \text{m}^3.
' "&chr(10)&"       2. Heat
'
    Selection.MoveDown Unit:=wdLine, Count:=147
    Selection.Copy
End Sub
Sub Macro64()
'
' Macro64 Macro
'
' "&chr(10)&"       2. Undertaking Electrical Material Design
' "&chr(10)&"       · Purpose:
' "&chr(10)&"       o Select and design materials for electrical systems to ensure efficiency and safe
ty.
' "&chr(10)&"       · Key Topics:
'
    Selection.MoveDown Unit:=wdLine, Count:=172
    Selection.Copy
End Sub
Sub Macro65()
'
' Macro65 Macro
' performance testing. Below, I detail how calculus can enhance each topic:
' "&chr(10)&"       1. Log Activity: Data Analysis
' "&chr(10)&"       · Application of Derivatives:
' "&chr(10)&"       o Tracking performance trends from logged data:
'
    Selection.Copy
End Sub
Sub Macro66()
'
' Macro66 Macro
'
' "&chr(10)&"
' "&chr(10)&"       dPdt=rate of progress,\frac{dP}{dt} = \text{rate of progress},
' "&chr(10)&"       where PP: performance level, tt: time.
' "&chr(10)&"       Example: If P(t)=5t2+2tP(t) = 5t^2 + 2t, the rate of progress at t=3t = 3 h
'
    Selection.Copy
End Sub
Sub Macro67()
'
' Macro67 Macro
' dPdt=10t+2  ?  dPdt=10(3)+2=32 units/hour.\frac{dP}{dt} = 10t + 2 \implies \frac{dP}{dt} = 10(3) + 2
 = 32 \, \text{units/hour}.
' "&chr(10)&"       · Optimization:
' "&chr(10)&"       o Use integrals to estimate cumulative productivity:
```

```
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'
    Selection.Copy
End Sub
Sub Macro68()
'
' Macro68 Macro
'
' "&chr(10)&"       Ptotal=?0T(5t2+2t)dt.P_{\text{total}} = \int_0^T \left( 5t^2 + 2t \right) dt.
' "&chr(10)&"       2. Undertaking Electrical Material Design
' "&chr(10)&"       · Voltage Drop and Power Loss:
' "&chr(10)&"       o For a cable with r
'
    Selection.Copy
End Sub
Sub Macro69()
'
' Macro69 Macro
'
' "&chr(10)&"       o For a cable with resistance RR and current II, power loss is:
' "&chr(10)&"
' "&chr(10)&"       P=?0LI2R(x)dx,P = \int_0^L I^2 R(x) dx,
' "&chr(10)&"       where R(x)R(x): resistance at length xx.
'

'
    Selection.Copy
End Sub
Sub Macro70()
'
' Macro70 Macro
'
' "&chr(10)&"       where R(x)R(x): resistance at length xx.
' "&chr(10)&"       Example: For R(x)=0.5+0.01xR(x) = 0.5 + 0.01x and I=10 AI = 10 \, \text{A}, find t
he power loss over L=10 mL = 10 \, \text{m}:
' "&chr(10)&"
'

'
    Selection.Copy
End Sub
Sub Macro71()
'
' Macro71 Macro
'   P=?010102(0.5+0.01x)dx=100?010(0.5+0.01x)dx.P = \int_0^{10} 10^2 (0.5 + 0.01x) dx = 100 \int_0^{10
} (0.5 + 0.01x) dx.
' "&chr(10)&"
' "&chr(10)&"       P=100[0.5x+0.005x2]010=100(5+0.5)=550 W.P = 100 \left[ 0.5x + 0.005x^2 \right]_0^{
10} =
'
    Selection.Copy
End Sub
Sub Macro72()
'
' Macro72 Macro
'
' "&chr(10)&"       P=100[0.5x+0.005x2]010=100(5+0.5)=550 W.P = 100 \left[ 0.5x + 0.005x^2 \right]_0^{
10} = 100 (5 + 0.5) = 550 \, \text{W}.
' "&chr(10)&"       3. Inspection of Electrical Systems
' "&chr(10)&"       · Insulation Resistance Testing:
'
    Selection.Copy
End Sub
Sub Macro73()
'
' Macro73 Macro
' . Inspection of Electrical Systems
' "&chr(10)&"       · Insulation Resistance Testing:
' "&chr(10)&"       o Use integral-based models to assess insulation decay over time:
' "&chr(10)&"
' "&chr(10)&"       R(t)=R0e-?t,R(t) = R_0 e
'
    Selection.Copy
End Sub
```

```
Sub Macro74()
'
' Macro74 Macro
'
' "&chr(10)&"       R(t)=R0e-?t,R(t) = R_0 e^{-\lambda t},
' "&chr(10)&"       where R0R_0: initial resistance, ?\lambda: decay constant.
' "&chr(10)&"       Example: For R0=100 kOR_0 = 100 \, \text{k}\Omega, ?=0.02\lambda = 0.02, find R(10
)R(10):
'
    Selection.Copy
End Sub
Sub Macro75()
'
' Macro75 Macro
'
' "&chr(10)&"       R(10)=100e-0.02·10=100e-0.281.87 kO.R(10) = 100 e^{-0.02 \cdot 10} = 100 e^{-0.2}
\approx 81.87 \, \text{k}\Omega.
' "&chr(10)&"       4. Design and Drawing of Electrical Panels
' "&chr(10)&"       · Current Distribution
'
    Selection.Copy
End Sub
Sub Macro76()
'
' Macro76 Macro
' o Use calculus to balance loads across circuits:
' "&chr(10)&"
' "&chr(10)&"       Itotal=?0TI(t)dt,I_{\text{total}} = \int_0^T I(t) dt,
' "&chr(10)&"       where I(t)I(t): current draw over time.
' "&chr(10)&"       Example: For I(
'
    Selection.Copy
End Sub
Sub Macro77()
'
' Macro77 Macro
'
' "&chr(10)&"       Example: For I(t)=5+t2I(t) = 5 + t^2, the total current over T=4 sT = 4 \, \text{s
} is:
' "&chr(10)&"
' "&chr(10)&"       Itotal=?04(5+t2)dt=[5t+t33]04=(20+21.33)-0=41.33 A.I_{\text{total}} = \int_0^4 (5
+ t^2) dt = \left[ 5
'
    Selection.Copy
End Sub
Sub Macro78()
'
' Macro78 Macro
' 5. Wiring Design
' "&chr(10)&"       · Voltage Drop Across Wiring:
' "&chr(10)&"
' "&chr(10)&"       ?V=?0LIR dx,\Delta V = \int_0^L I R \, dx,
' "&chr(10)&"       where II: current, RR: resistance per unit length.
'
    Selection.Copy
End Sub
Sub Macro79()
'
' Macro79 Macro
'   ?V=?05010·0.2 dx=10·0.2·50=100 V.\Delta V = \int_0^{50} 10 \cdot 0.2 \, dx = 10 \cdot 0.2 \cdot 50
 = 100 \, \text{V}.
' "&chr(10)&"       6. Material Design for Components
' "&chr(10)&"       · Heat Dissipation in Components:
'
    Selection.Copy
End Sub
Sub Macro80()
'
' Macro80 Macro
' 6. Material Design for Components
' "&chr(10)&"       · Heat Dissipation in Components:
' "&chr(10)&"       o Use Fourier’s law for heat transfer:
' "&chr(10)&"
```

```
' "&chr(10)&"       Q=?0TkA?T dt,Q = \int_0^T k A \Delta T \, dt,
'
    Selection.MoveDown Unit:=wdLine, Count:=22
    Selection.Copy
End Sub
Sub Macro81()
'
' Macro81 Macro
'
' "&chr(10)&"       2. Analysis: Evaluate system behavior under changing conditions.
' "&chr(10)&"       3. Validation: Ensure designs meet performance and safety standards.
'

'
    Selection.MoveDown Unit:=wdLine, Count:=40
    Selection.Copy
End Sub
Sub Macro82()
'
' Macro82 Macro
'   o Offered by the Department of Higher Education and Training (DHET) in South Africa.
' "&chr(10)&"       o Combine theoretical knowledge and practical application in disciplines like engi
neering, natural sciences, and business studies.
'
    Selection.Copy
End Sub
Sub Macro83()
'
' Macro83 Macro
' 2. ICASS (Internal Continuous Assessment):
' "&chr(10)&"       o Designed to monitor student progress through class tests, assignments, and pract
ical work.
' "&chr(10)&"       o Contributes to a semester or final mark.
' "&chr(10)&"       o Re
'
    Selection.Copy
End Sub
Sub Macro84()
'
' Macro84 Macro
'   1. Marksheet Records:
' "&chr(10)&"       o Capture detailed records of student performance over time.
' "&chr(10)&"       o Include theoretical, practical, and project components.
' "&chr(10)&"       2. Tools for Assessment:
'
    ActiveWindow.ActivePane.SmallScroll Down:=41
    Selection.Copy
End Sub
Sub Macro85()
'
' Macro85 Macro
' Grade Scales:
' "&chr(10)&"       § Marks are recorded using weighted percentages:
' "&chr(10)&"       § 70%-100%: Excellent
' "&chr(10)&"       § 60%-69%: Good
' "&chr(10)&"       § 50%-59%: Satisfactory
' "&chr(10)&"       § Below 50
'
    Selection.Copy
End Sub
Sub Macro86()
'
' Macro86 Macro
' § Below 50%: Needs Improvement.
' "&chr(10)&"       3. Guidelines for Reporting:
' "&chr(10)&"       o Final marksheets must integrate ICASS results with exam marks.
' "&chr(10)&"       o Include:
' "&chr(10)&"       § Semester Marks (e.g.
'
    Selection.Copy
End Sub
Sub Macro87()
'
```

```
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' Macro87 Macro
'
' "&chr(10)&"       · Marksheet Example:
' "&chr(10)&"       o Theoretical Tests: 30%
' "&chr(10)&"       o Practical Assignments: 50%
' "&chr(10)&"       o Portfolio: 20%
' "&chr(10)&"       2. Natural Sciences:
' "&chr(10)&"       · ICASS Structu
'
    Selection.Copy
End Sub
Sub Macro88()
'
' Macro88 Macro
'
' "&chr(10)&"       o Lab experiments and fieldwork reports evaluated continuously.
' "&chr(10)&"       o Emphasis on scientific method application.
' "&chr(10)&"       · Tools:
' "&chr(10)&"       o Lab evaluation rubrics to assess experimental pre
'
    Selection.Copy
End Sub
Sub Macro89()
'
' Macro89 Macro
'
' "&chr(10)&"       · ICASS Structure:
' "&chr(10)&"       o Case studies, presentations, and business plans.
' "&chr(10)&"       o Grading focus on decision-making and analysis skills.
' "&chr(10)&"       · Assessment Example:
'
    ActiveWindow.ActivePane.SmallScroll Down:=27
    Selection.Copy
End Sub
Sub Macro90()
'
' Macro90 Macro
'
' "&chr(10)&"       o Group Projects: 50%
' "&chr(10)&"       Final Statement Reports
' "&chr(10)&"       · Provide a summary of semester achievements.
' "&chr(10)&"       · Include:
' "&chr(10)&"       o ICASS mark breakdown.
'
    ActiveWindow.ActivePane.SmallScroll Down:=6
    ActiveWindow.ActivePane.LargeScroll Down:=1
    Selection.Copy
End Sub
Sub Macro91()
'
' Macro91 Macro
'
' "&chr(10)&"       1. Calculating Semester Marks Using Weighted Averages
' "&chr(10)&"       The semester mark combines the theoretical and practical components:
' "&chr(10)&"
' "&chr(10)&"       Msem=wtT+wpPwt+wp,M_{\text{sem}} = \frac{w_t T + w_p P
'
    Selection.Copy
End Sub
Sub Macro92()
'
' Macro92 Macro
'
' "&chr(10)&"       where:
' "&chr(10)&"       · TT: Theoretical component score,
' "&chr(10)&"       · PP: Practical component score,
' "&chr(10)&"       · wt,wpw_t, w_p: Weights for theoretical and practical marks.
' "&chr(10)&"       Example: If wt
'
    Selection.Copy
End Sub
Sub Macro93()
'
```

```
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' Macro93 Macro
'   Example: If wt=0.6w_t = 0.6, wp=0.4w_p = 0.4, T=75T = 75, and P=85P = 85:
' "&chr(10)&"
' "&chr(10)&"       Msem=(0.6·75)+(0.4·85)0.6+0.4=45+341=79.M_{\text{sem}} = \frac{(0.6 \cdot 75) + (0
.4 \cdot 85)}{0.6 + 0.4} = \frac{45 + 34}{1} = 79
'
    Selection.Copy
End Sub
Sub Macro94()
'
' Macro94 Macro
' Msem=(0.6·75)+(0.4·85)0.6+0.4=45+341=79.M_{\text{sem}} = \frac{(0.6 \cdot 75) + (0.4 \cdot 85)}{0.6
+ 0.4} = \frac{45 + 34}{1} = 79.
' "&chr(10)&"       2. Total Final Mark Calculation
' "&chr(10)&"       The final mark combines semester marks (SS
'
    Selection.Copy
End Sub
Sub Macro95()
'
' Macro95 Macro
' F=0.4S+0.6E.F = 0.4S + 0.6E.
' "&chr(10)&"       Example: If S=79S = 79 and E=82E = 82:
' "&chr(10)&"
' "&chr(10)&"       F=0.4·79+0.6·82=31.6+49.2=80.8.F = 0.4 \cdot 79 + 0.6 \cdot 82 = 31.6 + 49.2 = 80.
8.
' "&chr(10)&"       3. St
'
    Selection.Copy
End Sub
Sub Macro96()
'
' Macro96 Macro
'
' "&chr(10)&"       · Grade Distribution Analysis: Analyze how grades are distributed across students
using measures like mean (μ\mu), variance (s2\sigma^2), and standard deviation (s\sigma):
' "&chr(10)&"
' "&chr(10)&"       μ=?xiN,s2=?(xi-μ)2N
'
    Selection.Copy
End Sub
Sub Macro97()
'
' Macro97 Macro
'
' "&chr(10)&"       Example: Grades: [75,80,85,70,90][75, 80, 85, 70, 90], N=5N = 5:
' "&chr(10)&"       1. Mean:
' "&chr(10)&"
' "&chr(10)&"       μ=75+80+85+70+905=80.\mu = \frac{75 + 80 + 85 + 70 + 90}{5} = 80.
' "&chr(10)&"       2. Vari
'
    Selection.Copy
End Sub
Sub Macro98()
'
' Macro98 Macro
'   s2=(75-80)2+(80-80)2+(85-80)2+(70-80)2+(90-80)25=50.\sigma^2 = \frac{(75-80)^2 + (80-80)^2 + (85-8
0)^2 + (70-80)^2 + (90-80)^2}{5} = 50.
' "&chr(10)&"       3. Standard Deviation:
' "&chr(10)&"
' "&chr(10)&"       s=507.07.\sigma = \s
'
    Selection.Copy
End Sub
Sub Macro99()
'
' Macro99 Macro
'
' "&chr(10)&"
' "&chr(10)&"       s=507.07.\sigma = \sqrt{50} \approx 7.07.
' "&chr(10)&"       4. Integrals for Continuous Assessment Analysis
' "&chr(10)&"       · Cumulative Marks Distribution: Use integrals to model cumulative performan
'
```

```
    Selection.Copy
End Sub
Sub Macro101()
'
' Macro101 Macro
'
' "&chr(10)&"       · Project Grades: Model project grading as a function of effort over time using de
rivatives:
' "&chr(10)&"
' "&chr(10)&"       dPdt=kE(t),\frac{dP}{dt} = kE(t),
' "&chr(10)&"       where E(t)E(t): effort, kk: a scaling fact
'
    Selection.Copy
End Sub
Sub Macro102()
'
' Macro102 Macro
' Natural Sciences:
' "&chr(10)&"       · Lab Precision: Evaluate experiment repeatability using statistical deviation:
' "&chr(10)&"
' "&chr(10)&"       CV=sμ×100.CV = \frac{\sigma}{\mu} \times 100.
'

'
    Selection.Copy
End Sub
Sub Macro103()
'
' Macro103 Macro
' Business Studies:
' "&chr(10)&"       · Case Study Success: Analyze assignment success using regression models to predic
t trends:
' "&chr(10)&"
' "&chr(10)&"       y=mx+b.y = mx + b.
' "&chr(10)&"       Purpose of Calculus and Stati
'
    Selection.MoveDown Unit:=wdLine, Count:=197
    Selection.Copy
End Sub
Sub Macro104()
'
' Macro104 Macro
'   M'=M-MminMmax-Mmin·100,M' = \frac{M - M_{\text{min}}}{M_{\text{max}} - M_{\text{min}}} \cdot 100,
' "&chr(10)&"       where M'M': scaled marks, Mmin,MmaxM_{\text{min}}, M_{\text{max}}: minimum and max
imum raw marks.
'

'
    Selection.MoveDown Unit:=wdLine, Count:=36
    ActiveWindow.ActivePane.VerticalPercentScrolled = 175
    Selection.Copy
End Sub
Sub Macro105()
'
' Macro105 Macro
'
' "&chr(10)&"   · Timetable Functionality:
' "&chr(10)&"   o The timetable systems used in vocational training programs need to be assessed for t
heir ability to provide functional, outcome-oriented schedules for both academic and practical trainin
g in engin
'
    Selection.MoveDown Unit:=wdLine, Count:=35
    Selection.Copy
End Sub
Sub Macro106()
'
' Macro106 Macro
' focusing on time management, outcomes, and practical application of skills.
' "&chr(10)&"   · Outcome-Based Design:
' "&chr(10)&"   The research will focus on outcome-oriented systems, where the success of students in
engineering (particul
'
    Selection.MoveDown Unit:=wdLine, Count:=40
```

```
    ActiveWindow.ActivePane.LargeScroll Down:=3
    ActiveWindow.ActivePane.VerticalPercentScrolled = 155
    Selection.Copy
End Sub
Sub Macro107()
'
' Macro107 Macro
'    · Are you interested in how industry collaborations can further improve the electrical engineering
 curriculum?
' "&chr(10)&"    · How can technology (e.g., AI, IoT, machine learning) enhance learning in electrical
engineering education?
'
    Selection.MoveDown Unit:=wdLine, Count:=61
    ActiveWindow.ActivePane.VerticalPercentScrolled = 105
    Selection.Copy
End Sub
Sub Macro108()
'
' Macro108 Macro
' Histogram & Statistical Analysis of Training & Power Systems
' "&chr(10)&"   ?? Histogram & Droitegre Equation in Module Analysis
' "&chr(10)&"   · Mathematical Representation of Learning & Power Distribution
' "&chr(10)&"   o Hist
'
    Selection.Copy
End Sub
Sub Macro109()
'
' Macro109 Macro
'
' "&chr(10)&"   Model   Variance Analysis   X1  X2  X3  X5  X6  X7  X8
' "&chr(10)&"   Y1  Variance in student training hours  ?   ?   ?   ?   ?   ?   ?
' "&chr(10)&"   Y2  Variance in attendance  ?   ?   ?   ?   ?   ?   ?
' "&chr(10)&"   Y3  Energy demand in workplace training ?   ?   ?   ?   ?   ?   ?
'
    Selection.Copy
End Sub
Sub Macro110()
'
' Macro110 Macro
'
' "&chr(10)&"   Y2  Variance in attendance  ?   ?   ?   ?   ?   ?   ?
' "&chr(10)&"   Y3  Energy demand in workplace training ?   ?   ?   ?   ?   ?   ?
' "&chr(10)&"   Y4  Energy supply fluctuations  ?   ?   ?   ?   ?   ?   ?
'

'
    ActiveWindow.ActivePane.VerticalPercentScrolled = 115
End Sub
Sub Macro111()
'
' Macro111 Macro
' o Determine RthR_{th} by deactivating all sources (replace voltage sources with short circuits and c
urrent sources with open circuits).
'

End Sub
Sub Macro112()
'
' Macro112 Macro
' Function K_Rdiv1(R1, R2)
' "&chr(10)&"   ' Gain of resistor divider
' "&chr(10)&"   K_Rdiv1 = R2 / (R2 + R1)
'


' "&chr(10)&"End Function
'
End Sub
Sub Macro113()
'
' Macro113 Macro
' the divider is creating a precision +5V reference from an available +10V reference. The +5V level is
 used as a reference voltage for an ADC. But how accurate is this +5V level? Let's calculate the outpu
```

```
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t given ideal components and then given initial toler
'
End Sub
Sub Macro114()
'
' Macro114 Macro
'
'

' "&chr(10)&"        =K_Rdiv1(C11,D11)
'

' "&chr(10)&"where C11 and D11 hold R1 and R2. Vo calculates the output as
'

' "&chr(10)&"                    vo = K_Rdiv * vs
'

' "&chr(10)&"And finally we calculate the error from the ideal result in both voltage and %.
'

' "&chr(10)&"The first row above, tells us the
'
End Sub
Sub Macro115()
'
' Macro115 Macro
' Function Tri_Wave(t, V1, V2, T1, T2)
'

' "&chr(10)&"' ************************************************************
' "&chr(10)&"' Generate Triangle Wave
' "&chr(10)&"'
' "&chr(10)&"' t - time
' "&chr(10)&"' V1 - voltage level 1 (initial voltage)
' "&chr(10)&"' V2 - voltage level 2
' "&chr(10)&"' T1 - period ramping from V1 to V2
' "&chr(10)&"' T2 -
'
End Sub
Sub Macro116()
'
' Macro116 Macro
'  given t, how many full cycles have occurred
' "&chr(10)&"N = Application.WorksheetFunction.Floor(t / (T1 + T2), 1)
'

' "&chr(10)&"' calc the time point in the current triangle wave
' "&chr(10)&"t_tri = t - (T1 + T2) * N
'

' "&chr(10)&"' if during T1, calculate triangle value using V1 and dV_dt1
' "&chr(10)&"If t_
'
End Sub
Sub Macro117()
'
' Macro117 Macro
'  if during T2, calculate triangle value using V2 and dV_dt2
' "&chr(10)&"Else
' "&chr(10)&"   Tri_Wave = V2 + dV_dt2 * (t_tri - T1)
'

' "&chr(10)&"End If
'


'

' "&chr(10)&"End Function
' "&chr(10)&"
'
End Sub
Sub Macro118()
```

```
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'
' Macro118 Macro
' The time column is generated by entering the time increment dT at location C14. Each time point is s
imply the previous time point plus the delta, A17+$C$14. Note, that C14 is a fixed reference point.
'

' "&chr(10)&"The cells in the Vtri column holds the function call
'
End Sub
Sub Macro119()
'
' Macro119 Macro
' CREATING THE WAVEFORM
'

' "&chr(10)&"How do you create a triangle wave? The waveform simply ramps linearly from V1 to V2 durin
g T1, and then from V2 to V1 during T2. Therefore, you need to calculate the slope for both cases.
'

' "&chr(10)&"    dV_dt1 = (V2 - V1) / T1
' "&chr(10)&"    dV_dt2
'
End Sub
Sub Macro120()
'
' Macro120 Macro
' given t, how many full cycles have occured
' "&chr(10)&"N = Application.WorksheetFunction.Floor(  t/(T1 + T2), 1)
'

' "&chr(10)&"' calc the time point in the current triangle wave
' "&chr(10)&"t_tri = t - (T1 + T2) * N
'
End Sub
Sub Macro121()
'
' Macro121 Macro
'     f t_tri <= T1 Then
' "&chr(10)&"        Tri_Wave = V1 + dV_dt1 * t_tri
'

' "&chr(10)&"If in period T2, the waveform is a function of V2 and the slope dV_dt2.
'

' "&chr(10)&"    Else
' "&chr(10)&"       Tri_Wave = V2 + dV_dt2 * (t_tri - T1)
'


'
End Sub
Sub Macro122()
'
' Macro122 Macro
' and the inverting amplifier
'

' "&chr(10)&"The gain (K = vo/vs) for each of these amplifiers is given by
'

' "&chr(10)&"    NON-INVERTING:   K_non = R1 / R2 +1
' "&chr(10)&"    INVERTING:           K_inv  = -R2 / R1
'

' "&chr(10)&"Let's create some VBA functions to perform these calculations Op_Amp_Gai
'
End Sub
Sub Macro123()
'
' Macro123 Macro
' Function K_op_non(R1, R2)
' "&chr(10)&"    ' Op amp closed loop gain - non-inverting amplifier
' "&chr(10)&"   K_op_non = (R2 + R1) / R1
'
```

```
' "&chr(10)&"End Function
'

'

' "&chr(10)&"Function K_op_inv(R1, R2)
' "&chr(10)&"    ' Op amp closed loop gain - inverting amplifier
' "&chr(10)&"   K_op_inv = -R2 / R1
'

' "&chr(10)&"End Functionn
'
End Sub
Sub Macro124()
'
' Macro124 Macro
' Non-Inverting Amplifier
' "&chr(10)&"R1     R2  K non       fbw
' "&chr(10)&"1.00E+09   1,000   1.0         999,999
' "&chr(10)&"1,000  1,000   2.0         500,000
' "&chr(10)&"1,000  9,000   10.0        100,000
'

' "&chr(10)&"
' "&chr(10)&"Inverting Amplifier
' "&chr(10)&"R1     R2  K inv       K non   fbw
' "&chr(10)&"1,000  1,000   -1.0        2.0     500,000
'
End Sub
Sub Macro125()
'
' Macro125 Macro
' SINE WAVE GENERATOR
'

' "&chr(10)&"
'

' "&chr(10)&"SIGNAL GENERATOR
'

' "&chr(10)&"Here's a way to generate and explore the sine wave. You can change its Amplitude, Frequen
cy, Offset, Phase and see the waveform change. The VBA function is a simple equation.
'

' "&chr(10)&"To see the VBA code hit ALT-F
'
End Sub
Sub Macro126()
'
' Macro126 Macro
' Function SineWave(t, Vp, fo, Phase, Vdc)
' "&chr(10)&"  ' create sine wave
' "&chr(10)&"  ' phase in deg
'

' "&chr(10)&"  Dim pi As Double
' "&chr(10)&"  pi = 3.1415927
'

' "&chr(10)&"  'Calc sine wave
' "&chr(10)&"  SineWave = Vp * Sin(2 * pi * fo * t + Phase * pi / 180) + Vdc
'

' "&chr(10)&"End Function
'

'
End Sub
Sub Macro127()
'
' Macro127 Macro
```

```
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' he function calculates the value of the of the sine wave at each time point t, given the
'

' "&chr(10)&"    Vp       - Magnitude Peak (V)
' "&chr(10)&"    fo        - Frequency (Hz)
' "&chr(10)&"    Phase - Phase (deg)
' "&chr(10)&"    Vdc     - Offset Voltage (V)
'

' "&chr(10)&"The phase gets converted from degre
'
End Sub
Sub Macro128()
'
' Macro128 Macro
' Vp    1   V
' "&chr(10)&"VDC    0   V
' "&chr(10)&"fo     200     Hz
' "&chr(10)&"Phase  0   deg
'

' "&chr(10)&"
' "&chr(10)&"dT     0.0001
'

' "&chr(10)&"The time column is generated by entering the time increment dT at location C14. Each time
 point is simply the previous time point plus the delta, A17+$C$14. Note, that C14 is a fix
'
End Sub
Sub Macro129()
'
' Macro129 Macro
' ublic Class transactionsGBox
' "&chr(10)&"    Const SERVICE_CHARGE_DECIMAL As Decimal = 6.5
' "&chr(10)&"    Const PIN As Integer = 9343
' "&chr(10)&"    Dim Balance As Decimal = 150
'

' "&chr(10)&"    Private Sub Label2_Click(ByVal sender As System.Object, ByVal e As System.EventArgs)
Handles Label2.C
'
End Sub
Sub Macro130()
'
' Macro130 Macro
' Private Sub Label2_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Label2.
Click
' "&chr(10)&"    End Sub
' "&chr(10)&"    Private Sub RadioButton5_CheckedChanged(ByVal sender As System.Object, ByVal e As Sys
tem.EventArgs) Handles topUpButton.CheckedChan
'
End Sub
Sub Macro131()
'
' Macro131 Macro
'  Private Function withdraw(ByVal amount As Decimal)
' "&chr(10)&"        Balance -= amount
' "&chr(10)&"        Return Balance
' "&chr(10)&"    End Function
' "&chr(10)&"    Private Function deposit(ByRef amount As Decimal)
' "&chr(10)&"        Balance += amount
' "&chr(10)&"        Return Balance
'
End Sub
Sub Macro132()
'
' Macro132 Macro
' End Function
' "&chr(10)&"    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs)
 Handles clearButton1.Click
' "&chr(10)&"    End Sub
' "&chr(10)&"    Private Sub Button1_Click_1(ByVal sender As System.Object, ByVal e As System.EventArg
s) Handles confirmBut
```

```
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'
End Sub
Sub Macro133()
'
' Macro133 Macro
' previewButton.Enabled = True
' "&chr(10)&"            proceedButton.Enabled = True
' "&chr(10)&"            pinBox.Enabled = False
' "&chr(10)&"        Else
' "&chr(10)&"            MessageBox.Show("Incorrect pin, try again", "Pin Error", MessageBoxButtons.OK
, MessageBoxIcon.Exclamation)
' "&chr(10)&"        End I
'
End Sub
Sub Macro134()
'
' Macro134 Macro
'  End Sub
' "&chr(10)&"    Private Sub Label4_Click(ByVal sender As System.Object, ByVal e As System.EventArgs)
Handles Label4.Click
' "&chr(10)&"    End Sub
' "&chr(10)&"    Private Sub Button2_Click(ByVal sender As System.Object, ByVal e As System.EventArgs)
 Handles clearButton2.Click
' "&chr(10)&"
'
End Sub
Sub Macro135()
'
' Macro135 Macro
'  Private Sub exitButton_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles ex
itButton.Click
' "&chr(10)&"        Me.Close()
' "&chr(10)&"    End Sub
' "&chr(10)&"    Private Sub previewButton_Click(ByVal sender As System.Object, ByVal e As System.Even
tArgs) Handles pr
'
End Sub
Sub Macro136()
'
' Macro136 Macro
' previewButton.Click
' "&chr(10)&"        If depositButton.Checked = True Then
' "&chr(10)&"            previewBalance.Text = deposit(transactionValueBox.Text)
' "&chr(10)&"        Else
' "&chr(10)&"            previewBalance.Text = withdraw(transactionValueBox.Text)
' "&chr(10)&"        End If
' "&chr(10)&"    End Sub
' "&chr(10)&"    Pr
'
End Sub
Sub Macro137()
'
' Macro137 Macro
' previewButton.Click
' "&chr(10)&"        If depositButton.Checked = True Then
' "&chr(10)&"            previewBalance.Text = deposit(transactionValueBox.Text)
' "&chr(10)&"        Else
' "&chr(10)&"            previewBalance.Text = withdraw(transactionValueBox.Text)
' "&chr(10)&"        End If
' "&chr(10)&"    End Sub
' "&chr(10)&"    Pr
'
End Sub
Sub Macro138()
'
' Macro138 Macro
'  Private Sub proceedButton_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles
 proceedButton.Click
' "&chr(10)&"        If depositButton.Checked = True Then
' "&chr(10)&"            finalBalance.Text = deposit(transactionValueBox.Text)
' "&chr(10)&"        Else
' "&chr(10)&"
'
```

```
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End Sub
Sub Macro139()
'
' Macro139 Macro
'  End If
' "&chr(10)&"    End Sub
' "&chr(10)&"End Class
'
End Sub
Sub Macro140()
'
' Macro140 Macro
' 1. Introduction to the Study
'

' "&chr(10)&"The "Crime Management System" is a web-based website for online complaining and computeri
zed management of crime records (Khan et al., 2008).
'

' "&chr(10)&"A criminal is a popular term used for a person who has committed a cri
'
End Sub
Sub Macro141()
'
' Macro141 Macro
'     Security of data.
' "&chr(10)&"    Minimize manual data entry.
' "&chr(10)&"    Better service.
' "&chr(10)&"    User-friendly and interactive.
' "&chr(10)&"    Minimum time required.
' "&chr(10)&"    Changing the manual system into an automated system.
'

' "&chr(10)&"1.1. Statement of the Problem
'
End Sub
Sub Macro142()
'
' Macro142 Macro
' Limitations on crime recording: Recording crime information manually.
' "&chr(10)&"Limitation on System Retrievals: The information is very difficult to retrieve, and findi
ng particular information, like searching for crime detail information, is challenging.
' "&chr(10)&"Proble
'
End Sub
Sub Macro143()
'
' Macro143 Macro
' Problems with updating records: Various changes to information, like crime details, are difficult to
 update.
' "&chr(10)&"More manpower required: Many police officers are needed to handle crime.
' "&chr(10)&"Time-consuming: It is time-consuming to record crime.
' "&chr(10)&"Consumes a large
'
End Sub
Sub Macro144()
'
' Macro144 Macro
' Time-consuming: It is time-consuming to record crime.
' "&chr(10)&"Consumes a large volume of paperwork: it requires much paper to record a crime file.
' "&chr(10)&"Lack of security and space: There is no security for data because it is paper-based and h
as no password.
' "&chr(10)&"Report g
'
End Sub
Sub Macro145()
'
' Macro145 Macro
' 4. Data gathering
'

' "&chr(10)&"To gather accurate data from the concerned body, the researcher used the following fact-f
inding techniques:
```

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'

' "&chr(10)&"    Interview: In o
'
End Sub
Sub Macro146()
'
' Macro146 Macro
' Document Analysis: To get historical information about the organization's activities and to know the
 organization's rules and regulations, the team tried to analyze as many documents as possible that we
re relevant to the new system.
' "&chr(10)&"Observation: To ge
'
End Sub
Sub Macro147()
'
' Macro147 Macro
' Analysis Methodology
'

' "&chr(10)&"The analysis approach used is object-oriented analysis (OOA). This method was selected be
cause "object-oriented analysis is a method of analysis that examines requirements from the perspectiv
es of the classes and objects found in t
'
End Sub
Sub Macro148()
'
' Macro148 Macro
' nalysis Tools:
'

' "&chr(10)&"    Class diagram
' "&chr(10)&"    Use case diagram
' "&chr(10)&"    Sequence diagram
' "&chr(10)&"    Activity diagram
'
End Sub
Sub Macro149()
'
' Macro149 Macro
' . Hardware and Software to Be Used for Implementation
'

' "&chr(10)&"The software requirements specification is the single most important document in the soft
ware development process. The following are software requirements:
'

' "&chr(10)&"    XAMPP Server, MySQL, Editor, Edraw
'
End Sub
Sub Macro150()
'
' Macro150 Macro
' rdware requirements are the tangible and visible components that are necessary to develop a system.
Hardware Tools that were used to develop this project are:
'

' "&chr(10)&"    Computers, Flash Disk (8GB), Pen and Paper, Mobile, Camera, Hard Disk.
'
End Sub
Sub Macro151()
'
' Macro151 Macro
' se case ID    Use case Name   Include/
' "&chr(10)&"Uc1    Create Account  Login
' "&chr(10)&"Uc2    View User Account   Login
' "&chr(10)&"Uc3    Update account  Login
' "&chr(10)&"Uc4    View user Activities    Login
' "&chr(10)&"Uc5    Take backup Login
' "&chr(10)&"Uc6    Restore backup  Login
' "&chr(10)&"Uc7    Assign placement for police Login
' "&chr(10)&"Uc8    View employee   L
'
```

```
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End Sub
Sub Macro152()
'
' Macro152 Macro
' Uc9   View comment    Login
' "&chr(10)&"Uc10   View nomination Login
' "&chr(10)&"Uc11   Post missing criminals  Login
' "&chr(10)&"Uc12   Post notice Login
' "&chr(10)&"Uc13   View criminal report    Login
' "&chr(10)&"Uc14   View placement  Login
' "&chr(10)&"Uc15   Register criminal   Login
' "&chr(10)&"Uc16   View nomination Login
' "&chr(10)&"Uc17   Send account request
'
End Sub
Sub Macro153()
'
' Macro153 Macro
' Uc15  Register criminal   Login
' "&chr(10)&"Uc16   View nomination Login
' "&chr(10)&"Uc17   Send account request for complaint  Login
' "&chr(10)&"Uc18   View order  Login
' "&chr(10)&"Uc19   View complaint request  Login
' "&chr(10)&"Uc20   View criminal   Login
' "&chr(10)&"Uc21   Register complaint  Login
' "&chr(10)&"Uc22   Order preventive police Login
'
End Sub
Sub Macro154()
'
' Macro154 Macro
' Uc21  Register complaint  Login
' "&chr(10)&"Uc22   Order preventive police Login
' "&chr(10)&"Uc23   Register  witness   Login
' "&chr(10)&"Uc24   Register  Accused   Login
' "&chr(10)&"Uc25   Register Accuser    Login
' "&chr(10)&"Uc26   Register first information report   Login
' "&chr(10)&"Uc27   Order preventive police Login
' "&chr(10)&"Uc28   Register emp
'
End Sub
Sub Macro155()
'
' Macro155 Macro
' Uc26  Register first information report   Login
' "&chr(10)&"Uc27   Order preventive police Login
' "&chr(10)&"Uc28   Register employee   Login
' "&chr(10)&"Uc29   Update employee Login
' "&chr(10)&"Uc30   View employee   Login
' "&chr(10)&"Uc31   Send complain   Login
' "&chr(10)&"Uc32   View complain response  Login
' "&chr(10)&"Uc33   View missing criminal   -
'
End Sub
Sub Macro156()
'
' Macro156 Macro
' Uc33  View missing criminal   -----------
' "&chr(10)&"Uc34   Give nomination -----------
' "&chr(10)&"Uc35   Give comment    -----------
' "&chr(10)&"Uc36   Login   -----------
' "&chr(10)&"Uc37   Logout  Login
' "&chr(10)&"Table 1. Use Case Identification
' "&chr(10)&"2.2. Use Case Diagram
'
End Sub
Sub Macro157()
'
' Macro157 Macro
' System Administrator: An administrator who interacts with the proposed system and has full control o
ver the system. After logging in to the system, their responsibilities include:
'
```

```
' "&chr(10)&"    View User Account
' "&chr(10)&"    Update Account
' "&chr(10)&"    View User Activities
' "&chr(10)&"
'
End Sub
Sub Macro158()
'
' Macro158 Macro
' Police Head: Has the following activities:
'

' "&chr(10)&"    Assign placement for preventive police
' "&chr(10)&"    View Employee
' "&chr(10)&"    View Nomination
' "&chr(10)&"    View missing criminal
' "&chr(10)&"    Create account
' "&chr(10)&"    View Comment
' "&chr(10)&"    Post missing criminals
' "&chr(10)&"    View Criminal Report
'
End Sub
Sub Macro159()
'
' Macro159 Macro
' Criminal Preventive Police: Have the following activities:
'

' "&chr(10)&"    View their Placement assigned by police head
' "&chr(10)&"    Register criminal
' "&chr(10)&"    Register complaint
' "&chr(10)&"    Register crime
' "&chr(10)&"    View complaint request
' "&chr(10)&"    View nomination
' "&chr(10)&"    View notice
' "&chr(10)&"    Send n
'
End Sub
Sub Macro160()
'
' Macro160 Macro
' Detective Officer: Have the following activities:
'

' "&chr(10)&"    View criminal
' "&chr(10)&"    Order preventive police
' "&chr(10)&"    Register witness
' "&chr(10)&"    Register Accused
' "&chr(10)&"    Register Accuser
' "&chr(10)&"    View witness
' "&chr(10)&"    View accused
' "&chr(10)&"    View accuser
' "&chr(10)&"    Generate First Information Rep
'
End Sub
Sub Macro161()
'
' Macro161 Macro
' Human Resource Manager: Have the following activities:
'

' "&chr(10)&"    Register Employee
' "&chr(10)&"    View Employee
' "&chr(10)&"    Update Employee
'
End Sub
Sub Macro162()
'
' Macro162 Macro
' Customer: Have the following activities:
'

' "&chr(10)&"    View Missing Criminal
```

```
' "&chr(10)&"    Give Nomination
' "&chr(10)&"    Give Comment
'

' "&chr(10)&"Complaint: Have the following activities:
'

' "&chr(10)&"    Send request
' "&chr(10)&"    View response
'
End Sub
Sub Macro163()
'
' Macro163 Macro
' Use Case Name Register Employee
' "&chr(10)&"Use Case ID    Uc28
' "&chr(10)&"Include    Login
' "&chr(10)&"Actor  Human resource manager
' "&chr(10)&"Description    The human resources manager accepts the user and registers them for the da
tabase in the system.
' "&chr(10)&"Precondition   The users should be workers at the po
'
End Sub
Sub Macro164()
'
' Macro164 Macro
' Precondition  The users should be workers at the police station.
' "&chr(10)&"Basic course of Action
'

' "&chr(10)&"Actor action
'

' "&chr(10)&"1. HR manager opens the system.
'

' "&chr(10)&"3. HR manager, click on the Register Employee Link.
'

' "&chr(10)&"5. Fill each individual field and press the register butt
'
End Sub
Sub Macro165()
'
' Macro165 Macro
' Basic course of Action
'

' "&chr(10)&"Actor action
'

' "&chr(10)&"1. HR manager opens the system.
'

' "&chr(10)&"3. HR manager, click on the Register Employee Link.
'

' "&chr(10)&"5. Fill each individual field and press the register button.
'

' "&chr(10)&"7. Use case end
' "&chr(10)&"
'

' "&chr(10)&"System response
'

' "&chr(10)&"2. The system ope
'
End Sub
Sub Macro166()
'
' Macro166 Macro
```

```
Sheet1 - 40

'
'

' "&chr(10)&"Actor action
'

' "&chr(10)&"1. HR manager opens the system.
'

' "&chr(10)&"3. HR manager, click on the Register Employee Link.
'

' "&chr(10)&"5. Fill each individual field and press the register button.
'

' "&chr(10)&"7. Use case end
' "&chr(10)&"
'

' "&chr(10)&"System response
'

' "&chr(10)&"2. The system opens to the user page.
'

'
End Sub
Sub Macro167()
'
' Macro167 Macro
' Alternative course of action
'

' "&chr(10)&"If the HR manager enters the wrong username or password, the system displays
'

' "&chr(10)&""Incorrect input, " and the process turns again from step 5.
' "&chr(10)&"Post condition Employees are legal users of the station.
' "&chr(10)&"Table 2. Register Em
'
End Sub
Sub Macro168()
'
' Macro168 Macro
' Use Case Name Create Account
' "&chr(10)&"Use Case ID    Uc1
' "&chr(10)&"Include    Login
' "&chr(10)&"Actor  Administrator
' "&chr(10)&"Description    Administrators create accounts for already-registered users.
' "&chr(10)&"Precondition   Administrators must login and should get a list of users' information from
'
End Sub
Sub Macro169()
'
' Macro169 Macro
'
'

' "&chr(10)&"Actor action
'

' "&chr(10)&"1. Administrator Login to the system
'

' "&chr(10)&"3. Click on the Create Account Link.
'

' "&chr(10)&"5. The administrator fills out the field, including the user name and password, then clic
ks on the Create Account button.
'

' "&chr(10)&"7. Use case-end.
'
```

```
    Application.Run MacroName:="Macro100"
End Sub
Sub Macro100()
'
' Macro100 Macro
'
'

End Sub
Sub Macro170()
'
' Macro170 Macro
' ystem response
'

' "&chr(10)&"2. The system opens to the Administrator page.
'

' "&chr(10)&"4. The system displays Create Account form
'

' "&chr(10)&"6. If the entered data is valid, the system will display the "You have successfully creat
ed an account" mes
'
End Sub
Sub Macro171()
'
' Macro171 Macro
' Basic course of Action
'

' "&chr(10)&"Actor action
'

' "&chr(10)&"1. Administrator Login to the system
'

' "&chr(10)&"3. Click on the Create Account Link.
'

' "&chr(10)&"5. The administrator fills out the field, including the user name and password, then clic
ks on the Create Account button.
'

' "&chr(10)&"7. Use
'
End Sub
Sub Macro172()
'
' Macro172 Macro
' clude -----
' "&chr(10)&"Actor  Police Head, Preventive Police, Detective Officer, Human Resource Manager, Adminis
trator, and Complaint.
' "&chr(10)&"Description    This use case is used to ensure security for system usage. Only legal user
s can access the system.
' "&chr(10)&"Precondition
'
End Sub
Sub Macro173()
'
' Macro173 Macro
'
'

' "&chr(10)&"Actor action
'

' "&chr(10)&"1. the user opens the system.
'

' "&chr(10)&"3. User-Click Login Menu
'
```

```
Sheet1 - 42

' "&chr(10)&"5. The user fills out the form and clicks the login button.
'

' "&chr(10)&"7. Use case-end
' "&chr(10)&"
'

' "&chr(10)&"System response
'

' "&chr(10)&"2. The system displays the Home Page.
'

' "&chr(10)&"4. The system displays the l
'
    ActiveWindow.Close
    ActiveWindow.Close
    ActiveWindow.Close
    Application.WindowState = wdWindowStateNormal
    Windows("Doc6 drawing tshingombe fiton assessment").Activate
    Application.WindowState = wdWindowStateNormal
    Windows("Doc15 tshingombe drawing16 (Last saved by user)").Activate
    Application.WindowState = wdWindowStateNormal
    Windows("Doc8 drawing tshingombe fiston (Last saved by user)").Activate
    Application.WindowState = wdWindowStateNormal
    Windows("Document1").Activate
    ActiveWindow.Close
    ActiveWindow.Close
    ActiveWindow.Close
    ActiveWindow.Close
    Application.Quit
End Sub
Sub Macro174()
'
' Macro174 Macro
' tender
'
End Sub
```

UserForm10 - 1

```
Private Sub ComboBox1_Change()

End Sub

Private Sub Frame1_Click()

End Sub
```

UserForm12 - 1

```
Private Sub Frame3_Click()

End Sub

Private Sub Label1_Click()

End Sub

Private Sub Label10_Click()

End Sub

Private Sub Label12_Click()

End Sub

Private Sub Label13_Click()

End Sub

Private Sub Label15_Click()

End Sub

Private Sub Label6_Click()

End Sub

Private Sub Label7_Click()

End Sub

Private Sub Label9_Click()

End Sub

Private Sub ListBox1_Click()

End Sub

Private Sub ListBox3_Click()

End Sub

Private Sub ListBox4_Click()

End Sub

Private Sub MultiPage1_Change()

End Sub

Private Sub TextBox1_Change()

End Sub

Private Sub UserForm_Click()

End Sub
```

```
UserForm14 - 1

Private Sub Label1_Click()

End Sub

Private Sub Label4_Click()

End Sub

Private Sub Label9_Click()

End Sub

Private Sub MultiPage1_Change()

End Sub

Private Sub OptionButton1_Click()

End Sub

Private Sub SpinButton1_Change()

End Sub

Private Sub SpinButton2_Change()

End Sub

Private Sub TabStrip1_Change()

End Sub

Private Sub TextBox1_Change()

End Sub

Private Sub TextBox11_Change()

End Sub

Private Sub TextBox13_Change()

End Sub

Private Sub TextBox16_Change()

End Sub

Private Sub TextBox17_Change()

End Sub

Private Sub TextBox18_Change()

End Sub

Private Sub TextBox19_Change()

End Sub

Private Sub TextBox20_Change()

End Sub

Private Sub TextBox22_Change()

End Sub

Private Sub TextBox3_Change()

End Sub
```

```
Private Sub TextBox4_Change()

End Sub

Private Sub TextBox5_Change()

End Sub

Private Sub TextBox6_Change()

End Sub

Private Sub TextBox8_Change()

End Sub

Private Sub TextBox9_BeforeDragOver(ByVal Cancel As MSForms.ReturnBoolean, ByVal Data As MSForms.DataO
bject, ByVal X As Single, ByVal Y As Single, ByVal DragState As MSForms.fmDragState, ByVal Effect As M
SForms.ReturnEffect, ByVal Shift As Integer)

End Sub

Private Sub TextBox9_BeforeDropOrPaste(ByVal Cancel As MSForms.ReturnBoolean, ByVal Action As MSForms.
fmAction, ByVal Data As MSForms.DataObject, ByVal X As Single, ByVal Y As Single, ByVal Effect As MSFo
rms.ReturnEffect, ByVal Shift As Integer)

End Sub

Private Sub TextBox9_BeforeUpdate(ByVal Cancel As MSForms.ReturnBoolean)

End Sub

Private Sub TextBox9_Change()

End Sub

Private Sub TextBox9_DblClick(ByVal Cancel As MSForms.ReturnBoolean)

End Sub

Private Sub TextBox9_DropButtonClick()

End Sub

Private Sub TextBox9_Enter()

End Sub

Private Sub TextBox9_Error(ByVal Number As Integer, ByVal Description As MSForms.ReturnString, ByVal S
Code As Long, ByVal Source As String, ByVal HelpFile As String, ByVal HelpContext As Long, ByVal Cance
lDisplay As MSForms.ReturnBoolean)

End Sub

Private Sub TextBox9_Exit(ByVal Cancel As MSForms.ReturnBoolean)

End Sub

Private Sub TextBox9_KeyDown(ByVal KeyCode As MSForms.ReturnInteger, ByVal Shift As Integer)

End Sub

Private Sub TextBox9_KeyPress(ByVal KeyAscii As MSForms.ReturnInteger)

End Sub

Private Sub TextBox9_MouseDown(ByVal Button As Integer, ByVal Shift As Integer, ByVal X As Single, ByV
al Y As Single)

End Sub

Private Sub TextBox9_MouseMove(ByVal Button As Integer, ByVal Shift As Integer, ByVal X As Single, ByV
al Y As Single)
```

```
End Sub

Private Sub TextBox9_MouseUp(ByVal Button As Integer, ByVal Shift As Integer, ByVal X As Single, ByVal
 Y As Single)

End Sub

Private Sub UserForm_Click()

End Sub
```

```
UserForm16 - 1

Private Sub Label1_Click()

End Sub

Private Sub Label17_Click()

End Sub

Private Sub Label6_Click()

End Sub

Private Sub Label7_Click()

End Sub

Private Sub Label8_Click()

End Sub

Private Sub Label9_Click()

End Sub

Private Sub ListBox1_Click()

End Sub

Private Sub MultiPage1_Change()

End Sub

Private Sub MultiPage2_Change()

End Sub

Private Sub ScrollBar1_Change()

End Sub

Private Sub SpinButton1_Change()

End Sub

Private Sub TabStrip1_Change()

End Sub

Private Sub TextBox1_Change()

End Sub

Private Sub TextBox10_Change()

End Sub

Private Sub TextBox11_Change()

End Sub

Private Sub TextBox12_Change()

End Sub

Private Sub TextBox13_Change()

End Sub

Private Sub TextBox15_Change()

End Sub
```

UserForm16 - 2

```
Private Sub TextBox16_Change()

End Sub

Private Sub TextBox17_Change()

End Sub

Private Sub TextBox18_Change()

End Sub

Private Sub TextBox19_Change()

End Sub

Private Sub TextBox2_Change()

End Sub

Private Sub TextBox3_Change()

End Sub

Private Sub TextBox4_Change()

End Sub

Private Sub TextBox6_Change()

End Sub

Private Sub TextBox7_Change()

End Sub

Private Sub TextBox8_Change()

End Sub

Private Sub TextBox9_Change()

End Sub

Private Sub UserForm_AddControl(ByVal Control As MSForms.Control)

End Sub

Private Sub UserForm_BeforeDropOrPaste(ByVal Cancel As MSForms.ReturnBoolean, ByVal Control As MSForms
.Control, ByVal Action As MSForms.fmAction, ByVal Data As MSForms.DataObject, ByVal X As Single, ByVal
 Y As Single, ByVal Effect As MSForms.ReturnEffect, ByVal Shift As Integer)

End Sub

Private Sub UserForm_Click()

End Sub

Private Sub UserForm_Deactivate()

End Sub

Private Sub UserForm_Error(ByVal Number As Integer, ByVal Description As MSForms.ReturnString, ByVal S
Code As Long, ByVal Source As String, ByVal HelpFile As String, ByVal HelpContext As Long, ByVal Cance
lDisplay As MSForms.ReturnBoolean)

End Sub

Private Sub UserForm_KeyDown(ByVal KeyCode As MSForms.ReturnInteger, ByVal Shift As Integer)

End Sub

Private Sub UserForm_KeyPress(ByVal KeyAscii As MSForms.ReturnInteger)
```

```
UserForm16 - 3


End Sub

Private Sub UserForm_Layout()

End Sub

Private Sub UserForm_MouseDown(ByVal Button As Integer, ByVal Shift As Integer, ByVal X As Single, ByV
al Y As Single)

End Sub

Private Sub UserForm_MouseUp(ByVal Button As Integer, ByVal Shift As Integer, ByVal X As Single, ByVal
 Y As Single)

End Sub

Private Sub UserForm_RemoveControl(ByVal Control As MSForms.Control)

End Sub

Private Sub UserForm_Resize()

End Sub

Private Sub UserForm_Terminate()

End Sub

Private Sub UserForm_Zoom(Percent As Integer)

End Sub
Function K_Rdiv1(R1, R2)
   ' Gain of resistor divider
   K_Rdiv1 = R2 / (R2 + R1)

End FunctionFunction Tri_Wave(t, V1, V2, T1, T2)

' ************************************************************
' Generate Triangle Wave
'
' t - time
' V1 - voltage level 1 (initial voltage)
' V2 - voltage level 2
' T1 - period ramping from V1 to V2
' T2 - period ramping from V2 to V1
'************************************************************

Dim t_tri, dV_dt1, dV_dt2 As Double
Dim N As Single

' Calculate voltage rates of change (slopes) during T1 and T2
dV_dt1 = (V2 - V1) / T1
dV_dt2 = (V1 - V2) / T2

' given t, how many full cycles have occurred
N = Application.WorksheetFunction.Floor(t / (T1 + T2), 1)

' calc the time point in the current triangle wave
t_tri = t - (T1 + T2) * N

' if during T1, calculate triangle value using V1 and dV_dt1
If t_tri <= T1 Then
    Tri_Wave = V1 + dV_dt1 * t_tri

' if during T2, calculate triangle value using V2 and dV_dt2
Else
   Tri_Wave = V2 + dV_dt2 * (t_tri - T1)

End If
 given t, how many full cycles have occured
N = Application.WorksheetFunction.Floor(t / (T1 + T2), 1)
```

```
' calc the time point in the current triangle wave
t_tri = t - (T1 + T2) * N

End FunctionIf t_tri <= T1 ThenElse
   Tri_Wave = V2 + dV_dt2 * (t_tri - T1)
    Tri_Wave = V1 + dV_dt1 * t_tri
    Function K_op_non(R1, R2)
   ' Op amp closed loop gain - non-inverting amplifier
   K_op_non = (R2 + R1) / R1

End Function

Function SineWave(t, Vp, fo, Phase, Vdc)
  ' create sine wave
  ' phase in deg

  Dim pi As Double
  pi = 3.1415927

  'Calc sine wave
  SineWave = Vp * Sin(2 * pi * fo * t + Phase * pi / 180) + Vdc

End Function

Function K_op_inv(R1, R2)
   ' Op amp closed loop gain - inverting amplifier
   K_op_inv = -R2 / R1

End Functionn
```

```
UserForm17 - 1

Private Sub Label4_Click()
End Sub
Private Sub TextBox16_Change()
End Sub
Private Sub TextBox17_Change()
End Sub
Private Sub TextBox18_Change()
End Sub
Private Sub TextBox19_Change()
End Sub
Private Sub TextBox2_Change()
End Sub
Private Sub TextBox20_Change()
End Sub
Private Sub TextBox21_Change()
End Sub
Private Sub TextBox23_Change()
End Sub
Private Sub TextBox24_Change()
End Sub
Private Sub TextBox26_Change()
End Sub
Private Sub TextBox27_Change()
End Sub
Private Sub TextBox29_Change()
End Sub
Private Sub TextBox3_Change()
End Sub
Private Sub TextBox31_Change()
End Sub
Private Sub TextBox33_Change()
End Sub
Private Sub TextBox35_Change()
End Sub
Private Sub TextBox36_Change()
End Sub
```

UserForm17 - 2

```
Private Sub TextBox5_Change()

End Sub

Private Sub TextBox7_Change()

End Sub

Private Sub TextBox8_Change()

End Sub

Private Sub TextBox9_Change()

End Sub

Private Sub UserForm_Activate()

End Sub

Private Sub UserForm_AddControl(ByVal Control As MSForms.Control)

End Sub

Private Sub UserForm_BeforeDragOver(ByVal Cancel As MSForms.ReturnBoolean, ByVal Control As MSForms.Co
ntrol, ByVal Data As MSForms.DataObject, ByVal X As Single, ByVal Y As Single, ByVal State As MSForms.
fmDragState, ByVal Effect As MSForms.ReturnEffect, ByVal Shift As Integer)

End Sub

Private Sub UserForm_BeforeDropOrPaste(ByVal Cancel As MSForms.ReturnBoolean, ByVal Control As MSForms
.Control, ByVal Action As MSForms.fmAction, ByVal Data As MSForms.DataObject, ByVal X As Single, ByVal
 Y As Single, ByVal Effect As MSForms.ReturnEffect, ByVal Shift As Integer)

End Sub

Private Sub UserForm_Click()

End Sub

Private Sub UserForm_DblClick(ByVal Cancel As MSForms.ReturnBoolean)

End Sub

Private Sub UserForm_Deactivate()

End Sub

Private Sub UserForm_Error(ByVal Number As Integer, ByVal Description As MSForms.ReturnString, ByVal S
Code As Long, ByVal Source As String, ByVal HelpFile As String, ByVal HelpContext As Long, ByVal Cance
lDisplay As MSForms.ReturnBoolean)

End Sub

Private Sub UserForm_Initialize()

End Sub

Private Sub UserForm_KeyPress(ByVal KeyAscii As MSForms.ReturnInteger)

End Sub

Private Sub UserForm_KeyUp(ByVal KeyCode As MSForms.ReturnInteger, ByVal Shift As Integer)

End Sub

Private Sub UserForm_MouseDown(ByVal Button As Integer, ByVal Shift As Integer, ByVal X As Single, ByV
al Y As Single)

End Sub

Private Sub UserForm_MouseUp(ByVal Button As Integer, ByVal Shift As Integer, ByVal X As Single, ByVal
 Y As Single)
```

```
UserForm17 - 3


End Sub

Private Sub UserForm_RemoveControl(ByVal Control As MSForms.Control)

End Sub

Private Sub UserForm_Scroll(ByVal ActionX As MSForms.fmScrollAction, ByVal ActionY As MSForms.fmScroll
Action, ByVal RequestDx As Single, ByVal RequestDy As Single, ByVal ActualDx As MSForms.ReturnSingle,
ByVal ActualDy As MSForms.ReturnSingle)

End Sub

Private Sub UserForm17_Terminate()

End Sub

End Subtshingombe fiston
```

Jul 23, 2025, 3:10 PM (2 days ago)

to me

Research Article Dec 11, 2023
https://doi.org/10.32388/JGU5FH

Web-Based Crime Management System for Samara City Main Police Station

Demelash Lemmi Ettisa1, Minota Milkias2

Abstract

Crime is a human experience, and it must be controlled. The Samara town police station plays a signifi
cant role in controlling crime. However, the management of crime activities is done manually, which is
 due to the lack of an automated system that supports the station workers in communicating with citize
ns to share information and store, retrieve, and manage crime activities. To control crime efficiently
, we need to develop online crime management systems.

This project, entitled "Web-Based Crime Management System," is designed to develop an online applicati
on in which any citizen can report crimes; if anybody wants to file a complaint against crimes, they m

ust enjoy online communication with the police. This project provides records of crimes that have led to disciplinary cases in addition to being used to simply retrieve information from the database. The system implemented is a typical web-based crime record management system based on client-server architecture, allowing data storage and crime record interchange with police stations.

Corresponding author: Demelash Lemmi Ettisa, nicemanyes@su.edu.et

Chapter One

1. Introduction to the Study

The "Crime Management System" is a web-based website for online complaining and computerized management of crime records (Khan et al., 2008).

A criminal is a popular term used for a person who has committed a crime or has been legally convicted of a crime. "Criminal" also means being connected with a crime. When certain acts or people are involved in or related to a crime, they are termed as criminal (Wex, 2023).

Samara City 's main police station is located in Samara City, within the Afar Regional State. It was established in 1984 E.C. with the purpose of protecting local communities from criminal activities. The Samara City police station is situated near the diesel suppliers in Samara City. In the first phase, there was a small number of police members, including commanders, inspectors, and constables. But recently, more than 170 police members have been employed. It is a well-organized police station that serves in crime prevention; the detection and conviction of criminals depend on a highly responsive manner. The effectiveness of this station is based on how efficient, reliable, and fast it is. As a consequence, the station maintains a large volume of information. To manage their information requirements, the station is currently using an information system. This system is manual and paper-based, where information is passed hand-to-hand, and information is kept in hard-copy paper files stored ordinarily in fili

UserForm3 - 1

Module1 - 1

```
Sub Macro1()
'
' Macro1 Macro
' tshng
'

'
End Sub
```

Module2 - 1

%PDF-1.7

4 0 obj
(Identity)
endobj
5 0 obj
(Adobe)
endobj
8 0 obj
<<
/Filter /FlateDecode
/Length 66348
/Length1 134620
/Type /Stream
>>
stream

[illegible]
endstream
endobj
11 0 obj
<<
/BaseFont /CIDFont+F1
/DescendantFonts [<<
/BaseFont /CIDFont+F1
/CIDSystemInfo <<
/Ordering 4 0 R
/Registry 5 0 R
/Supplement 0
>>
/CIDToGIDMap /Identity
/FontDescriptor <<
/Ascent 832
/CapHeight 571
/Descent -300
/Flags 6
/FontBBox 6 0 R
/FontFile2 8 0 R
/FontName /CIDFont+F1
/ItalicAngle 0
/StemV 7 0 R
/Type /FontDescriptor
>>
/Subtype /CIDFontType2
/Type /Font
/W 9 0 R
>>]
/Encoding /Identity-H
/Subtype /Type0
/ToUnicode 10 0 R
/Type /Font
>>
endobj
12 0 obj
<<
/Filter /FlateDecode
/Length 2442
>>
stream
[illegible]

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š)Ü&s—´›µlûNEÔ±^6Šhþ¸.7ÈlÞ£Ü4g;ûªì«>rV>æy”Çõ¢°É™9w,ø(íX€o¸.Ê:æÜe€Y·"ë¢šsg
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endobj
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/Font <<
/F1 11 0 R
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3 0 obj
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/Type /Page
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/Filter /FlateDecode
/Length 2318
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/Font <<
/F1 11 0 R
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endobj
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/Resources 16 0 R
/Rotate 0
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Module2 - 14

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endstream
endobj
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/Font <<
/F1 11 0 R
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endobj
17 0 obj
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/Contents [18 0 R]
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/MediaBox [0.0 0.0 612.0 792.0]
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/Resources 19 0 R
/Rotate 0
/Type /Page
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endstream
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22 0 obj
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/Font <<
/F1 11 0 R
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endobj
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Module2 - 15

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/MediaBox [0.0 0.0 612.0 792.0]
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/Resources 22 0 R
/Rotate 0
/Type /Page
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/Filter /FlateDecode
/Length 2526
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-Þ0#zÿôµ÷Ì!+=Ö»¤÷„°c²Ê¸-¹í!l,ùv‹;!ì#(s\sæ¤5(`ky8·DØõQ·pæ
 idüc»Xëw„½#l°çaï{GØ
¦Ùö÷/¯³?6+?ÞãÚ¶Þö|Ý±#ì_
 l¿pæ
 iì¬Ykã&Ìõ£™P¨Œû,0°Ù>÷€ž80à"ÈU ¶«HQAr£ !Wmf(
¢ÎÃøvsÕÅc‡‡éy\ÐÌœÛQ0á[5ø.?f@uóuíjU›¼ z2æþßß
Š¬áã«R'ÈÌf®áaLï—Í&qýqo½„79=4Ó÷_Õþ„ ¯iÚÖßa± MáI<CÔž»ø&+Çñà Q<"
p„—[#
áX67"™d›C¡™§Tú'õ 'Q^œyG'
Wƒ$Â´fš;¾°kçw%öêŽ½HÖÙèT:Ÿ×ëª¢4Ðñ¥1²+×éêKŽ…\h„3={›rväò@/Ä]Œõê
æþY.§°£@ »2½
V•ì   ´LH:Qx¹;)¼lÊl,8ƒ¡1BìÕÍ±Ø
‹""A¢ð0uÜ^• Á‹"+•üo3€šlì   ¹^²Ö8_qZè=   R¸U
/Á×E=n0Zö¢æPg‰Ã'NÐa@=Ä™,¨lqÉZ˜'°îÍŽ‹¨*þõo«pRt3"¡ðxæ›+ÂìóÁ)•hgÆ,‡k¬èžo™œã#ê`"ø$ÖÍÔÙåV§B°ÉË4ž+×q°Y
fd†'nòŒÒÒ!£AÉk¡ 4òV×''§ÆÀâ[eö¦aòA$pMÞNþ~|Ú;ûzð«›Ê Ð\1b¯ÎIF[ÿØƒÞ=ßPñ‹Ü+¬!ù0#9+t"Sð_EïI%ãŽr>"`bjŒ]DüzA
Š^ûãÀ{(ÂT`w‡EÃ]Y¼É³@7ËêRd·‡û}dÔå7°hê+gJññ-"žŸÿ±A'/
endstream
endobj
25 0 obj
<<
/Font <<
/F1 11 0 R
>>
>>
endobj
23 0 obj
<<
/Contents [24 0 R]
/CropBox [0.0 0.0 612.0 792.0]
/MediaBox [0.0 0.0 612.0 792.0]
/Parent 2 0 R
/Resources 25 0 R
/Rotate 0
/Type /Page
>>
endobj
27 0 obj
<<

```
/Filter /FlateDecode
/Length 2413
>>
stream
xœí]ËŽÛ6ÝûÝû+æÂòý
,×±çÄ.«§læybÄèùÀÈåÖÄœù´↑ï^¿+Ø5éÃz°YÖÃúëØ‡^Áªè€ô÷ƒQÇ>Ç¨']2j9ñœX'kƒË¯5'-ƒ7X±ü¯œey5Õy!Ø"œY«'}s'] 6"d0Ø
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àÕdæèž|f:Xƒ;@S
Ñe Ý"øk *Š›f Í8‰#P
i¡a¦ä$Ñ"©èUôäÒb
Þp+£µì?qge™b Û®  ÑY•ð Î¸¤Œ™&Ýg FÍ¿  Í Wp n vÝU↑Ê¦%'o7šÉ•*¼…è§¢Ü*üë&€Å)?ýö â™|åÌ7 ÏXTãCÿ*
8{ã94(Lô+_Öä [y
µ<õ|m3#Z šÐ
µßó+Ó³Á^ÁžGî ŽñH Ÿ©Í Ã.Æ–Ð y1‰þLŸ*$ÆB) ã"×2ßò´[/Û®EÊh VÀà
,-'p/ =qNŠzC C a"VK$!ë' Ò»'…×É\!ÝÃÿX£f ¡ã³ÿ        =qK f  9‰á‰~uç zW' ¸ âŒF/Î1 -Ôy
<Ç8T |ùgÙÌ°| ·¾¨ Î…Cÿ3,]Žµ0" ùÊ
»Ä-5³C á¹&Ì"Ž4`↑[ƒ: ÉC›ÐÇç=ÏÆ       ¼Ù°Üçy#áËšUäi>s (E šb~
¸|WÑ6f€K~mzê‹ '„PR›À~à*:2Þ`&ÿrYßÕRG§ò\ ½ó öÿ ¡óÌNG¥'wžï*eæ¬Vf nþöSf…ªh§"™s^ÙYôû ÏÊÍ)žt ³råÌ72sÑª§VŽ×I™
¹Tí, óM¥8tÁ¥¼[f…&0¤Æ,žMj+S
Ü ótf¡Â›Œ- Ä^`Ê¶„½BÊ↑jqÂBßó'n' ·¬h^ánÂCØ
Â; L§ -Kñ©#Ï÷ày2, -Â¼çŸ9xw` Ý:,øÆ
mc°z÷ù™-8U»64Î2gUÅ‹¾e"hly» v~
-¶"Ÿ7^{
·×^E?£ wkp ÁLnkW½Kk`↑¯!↑Ì8TZFý¢`JäŠ"P›$ Û°x`-'‹ ¯²ð 7 )bly5M´²$u9¶_¨(Ä3S'Š-H‡Õ6µ/—^↑õáÝœBBž€W¸…f×@ „lÜ
oÞ&‰ƒÆO<ÅÂû¼{e?¼³j.iåÜ;ûá£þÞ¥×½UÉ§ ôÜªTî)ñçsÞÃÛMü©Zõ:ù£§Çô¬§½ 0¤l ÂÂ
$þ®ù Álå&S'Ã«$þ,øÜ¶âP¢ƒ}¤n³_ÞeÃµ±ðT9¯%Ár²E["—CY/Øu'žË_G¾Nh"çùt -4 ^)Gì üDeÈ7ãÂ"C¹…"X,=2
¬Á F xW7Ó'œšc£ßMÇe Ë‰ôfîzŽß •ýœŸi>³-ªL v÷ÇFïŸ?Þ|;0½é ÇÆ•ž+›ý0Ye&3•Ü
Ä±Ã•3ß@ s$-H[VŸÇ±¼ Un]R^çdá¢ \§=2-Cf -Ī±ef
ÇOÅ      e=s^-ö4<Ië¶NÄû¬î 6àÝYŽ_ÍÁ3<Ý küÓMlÖ¿Ç—Ìfåç¦ðŸ: QÍ"^ôÔäEOM^ôD↑z§S‹ .....áž¹/Ãœ i!Í-> ^½24Ð      "ælX
ÚE€
"Èùoñ]$Ò2NzY¶$4M›ä8#Ò£~83¿ IB"B½òVÉÛ÷¦Ñ:OÀD©4-%aéé²*ãC m°¡ ß»-›-´J¦"ôSw[be 2>h î~@E ›¼;l ,.bhÁ?xbVðt#5
4 +¹|"2I`!„7òBXÔ«ùÓ"I4Á Cå¿ÏoòUy#ÀËÌÅ•ÃKìi Ù7!#n(=kPBô{£¾¸\H !3¦ƒ Nwã¤P1lC²Â²óÅ:¹«ÿÉ°B— Úuæ'Už/rî~ƒb6V•8
‰´½§jZ¶IM³¤|ûÔ´'ù Œ^Õ´ìÍ ]á™C ý¨ ¦dÏjÚxåÌ7PMË±´uÙâ!9~>§_«¦Ð€Š k TEù½ØwÓSGËBÝ®|ÎŽtÿîzé³1÷Ù¯f[N—U›üê'Xç' &ú
ËÌYÂªÌ¦½2V ÞDŸÜûÆ'Å´«Ö•+À½Æ~^ x^ôp§ÌT±á~úì O Ýâ#ð¨ùFO…~ Ã‹ ¨×kµ…N è&ñ2¼H'C§û)‹+÷s?åâÂ↑ùs4y\ íéV|æ÷æ,l[å',
Ï"ðk!¹
$Ö:³ ²¥'Š Ùd‹B·Õw %ä…;á I¯úÎ„¨õ 1Úú§ j¿«ÿT¥]†³ ·Sh‰_½Ñ¿ªš–©Ü„Ù=½súËá_ Ê²
endstream
endobj
28 0 obj
<<
/Font <<
/F1 11 0 R
>>
>>
endobj
26 0 obj
<<
/Contents [ 27 0 R ]
/CropBox [ 0.0 0.0 612.0 792.0 ]
/MediaBox [ 0.0 0.0 612.0 792.0 ]
/Parent 2 0 R
/Resources 28 0 R
/Rotate 0
/Type /Page
>>
endobj
30 0 obj
<<
/Filter /FlateDecode
/Length 2928
>>
stream
xœí]Koã6¾ûWä"åc† X ñÆ‡Þ
äVôT =í¡ýÿ‡ZÙnbåoÌ•Åx•ädA'H çùÍ↑eMb{ü»³ÆÚúÇOí½Tü·Ÿ ~Ùý³kzùñïß»‡§½{úw÷óÁÝ¹`<S>Þxúkçî N‡q¯¿5ôõ×Ó—Ýï¿Xëã§ã
4lI'ãñ'Ÿ~rßþ{°¦ê6Gtérý°
õm[]Ê»÷¯— Ü=ý°{|Úý¶ <™é ^)p:5 Ùp<þp/ß7ô8¥^¨É%v,ÄNpý0ûš¸b£ÂÂ'«¡¸ž‰CNö&†rü›#çš Çh'ïØG[ÓÇ´ô
‡zäšÚìÄNÖ3!H!  ‡„æ9C?0²äŠvQÕšÐpä„‡:Œ ÉlÍ³J É ô*dr:ªÎôžU ß-TOŒrc`Å]¤…T ¹èa÷ î¤t<tï \¤$      Á‡=å»ÄD
|¡ÚnF ŠÜöì$C{âÜ u6›Âç¼
×ÌÌc§Hç}{i,·ù Jl-,UÇ éGEïø Å{”VŸB žC©c¸ †¬ÊÃÒÅ[2í W Phfb^ã°ãr† â¤©õŠB¥ÃÆ6aé#Z¤tí]ýn ª 9ó®Ë½Þ™WW# ¤ãB2Îm ¿g7\
QßA9Š?[ xz™{<œalÀÎL\°          o~ Á"Ÿ6âL}·ÜÈ@_hÄ¾ PÈ[m¨S
         ‡²(3@I%t ©æf'4{nßÆlî‡å;4¦îüÈ&³ ãj}Ãj3
Z¤´¹B°ŸQ=l»l ·à
)(2i Áû=Ö        y%
```

/F1 11 0 R
>>
>>
endobj
32 0 obj
<<
/Contents [33 0 R]
/CropBox [0.0 0.0 612.0 792.0]
/MediaBox [0.0 0.0 612.0 792.0]
/Parent 2 0 R
/Resources 34 0 R
/Rotate 0
/Type /Page
>>
endobj
36 0 obj
<<
/Filter /FlateDecode
/Length 2097
>>
stream
xœí]ËŽÛ6Ýû+æÂ^¾I `;ñ¢»
== ÛüvÐOÚ*ã]š<ÿ½ÑOÇÍè×kMÊ};zþ²ùã=' ¦nPŽÁ‡éÖ>¼Ó?~=ß»â±èV§òe²åc*nùÓýëíŸOÏ¿o>=o>¯0Æ©ù7¯3pÜ5¶Iù0]èŸSŸ
ÊÉÔlê#š.ËV,M½ó}å
6O ?ÕÐ¯…A•™ÁW¼Ì¾]~Ë›O±|Y³éÜ• ·Ð,Šæ´íÓp"õ,z»Ôð +q<]Kq|[¯ÄñËKqú¶½å¢©Ó Xs:³S)N°gN§fšR#10ŽÑ%4A¼e®eØÊ1)qû
ò1\éeSé7ÐO—áËj†…A-'IÑ %ä¤ÃC½2L¶°#x¬Ÿ>öMIe l/¹!¶î©!·ƒrÃT¾.§Só-÷¨ebÏB)ã
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îžRëÆh5×(\ n=!+Ð+·n¬Wa†¾í@—Uô
NÊšÙõtaËW]7Áª4—•Â¹éõ„¬*—Û”âÁ'Ac'QSR@Ã¥;@ÆÃ¬,«ë°
'-på£°4›„Àm'ãqmþ¿ò÷Mâª,£Êfö¬G>ýh%q>ý€WælyŒŒ±.h-m‹â2)L‰3´<ýr•ÕnŠ$®bõ)TROE?©AÙVÙbYÈ ³ ÓE½2)æ•Z4
2)gv((šüÉto™$³¬ ÈR™àAöBä|ë
ÞË_³~Uªãt?WÅ!¥ç(ÎÝ†¶UONëÚÊÉ{›\²µN™9¬ ;[ŒTš#žÝC™<žýZ¬\jTa£"ÀoõôŠ.)ŒtÓ,.);'½âcy-"
Ü‹{Dã±—Ä£^¸Òî±$¶v/$oOÀ`²E2;‹A½„]SS«6®ŒXåš¥ÖcxÙf¡õCaÓ]|Ö
^I™sÆ&%7aþ§W-ÒfR~.›¤ÞŠ§ÓíÃpÖ¨¹F•ÒÒþ£%Á°3Bý¦‰KÈL®Ý6)Cdá¢f/\
%ML}
ôik ¡ôÃÒ†°áW†+‡zÅ Ù
§‡4w$š?]]U¾]PiÞiåï‰‹à }ß·¡¯Ÿ‹'/Ð‹‹à¢ÿN4îNÃq)·&×ä"ä[FE•N\OÓÏ¦má´Ù\„‡ç"x•™~dÆÞ¾ã•\„ÁE ÁE`°Âje'2]gNõ€
\}ÃÊup°åd½Ï/4yCƒ‹pÒÕê¦£Us@Ãà"ÅNƒ‹p‹\Ÿ"Øyq¿`\„ÁE ›ä"Ò*†9‰>¸gKìà"Ü$!h¯'›V\„s±þp\„`²Ê:çÔ}óhðIÑL•‰Ý[ŽF
é)‰öžj•!Æò¾ÞZåéŠ^µÊHÄ«¶¬ÝËqÄÆ]A-òÒ-¯ VMRnÞ±t®WÇ×Ž%ª°àbk…«¡n×ÆAa¦MðÞÅCL™ÊA8+´) ¬ šÐ bÎ
;SÆ7¨÷ Vù°N&cz©SB2ú ,›UÂCyÉ&C±Â§-
Gø-»PË¢ÂaN @íÊUõI,tè³Fß"{¶\ÁØT8öØocpŽÕ„+é ÆÐ¡2OÍš^ñ Â†2q8Æì9[XÂF¶å\×*œt«‰¨D†áo¢v \lÌ
endstream
endobj
37 0 obj
<<
/Font <<
/F1 11 0 R
>>
>>
endobj
35 0 obj
<<
/Contents [36 0 R]
/CropBox [0.0 0.0 612.0 792.0]
/MediaBox [0.0 0.0 612.0 792.0]
/Parent 2 0 R
/Resources 37 0 R
/Rotate 0
/Type /Page
>>
endobj
39 0 obj
<<
/Filter /FlateDecode
/Length 3035
>>
stream
xœí]Én#G½ë+ü©Ô¾
{ŽÐvô'[0¤öÈìÇ¶Q€PAÕsCCè‹°^ŠpI^HíIã¸ž¼
¢
BbÐØç

endstream
endobj
40 0 obj
<<
/Font <<
/F1 11 0 R
>>
>>
endobj
38 0 obj
<<
/Contents [39 0 R]
/CropBox [0.0 0.0 612.0 792.0]
/MediaBox [0.0 0.0 612.0 792.0]
/Parent 2 0 R
/Resources 40 0 R
/Rotate 0
/Type /Page
>>
endobj
42 0 obj
<<
/Filter /FlateDecode
/Length 2170
>>
stream

endstream
endobj

Module2 - 20

Module2 - 21

/Rotate 0
/Type /Page
>>
endobj
10 0 obj
<<
/Length 1641
>>
stream
/CIDInit /ProcSet findresource begin 12 dict begin begincmap /CIDSystemInfo << /Registry (Adobe) /Orde
ring (UCS) /Supplement 0 >> def /CMapName /Adobe-Identity-UCS def /CMapType 2 def 1 begincodespacerang
e <0000> <FFFF> endcodespacerange 94 beginbfchar <0003> <0020> <0005> <0022> <0007> <0024> <0009> <002
6> <000A> <0027> <000B> <0028> <000C> <0029> <000D> <002A> <000E> <002B> <000F> <002C> <0010> <002D> <
0011> <002E> <0012> <002F> <0013> <0030> <0014> <0031> <0015> <0032> <0016> <0033> <0017> <0034> <0018
> <0035> <0019> <0036> <001A> <0037> <001B> <0038> <001C> <0039> <001D> <003A> <001F> <003C> <0020> <0
03D> <0021> <003E> <0022> <003F> <0024> <0041> <0025> <0042> <0026> <0043> <0027> <0044> <0028> <0045>
 <0029> <0046> <002A> <0047> <002B> <0048> <002C> <0049> <002E> <004B> <002F> <004C> <0030> <004D> <00
31> <004E> <0032> <004F> <0033> <0050> <0034> <0051> <0035> <0052> <0036> <0053> <0037> <0054> <0038>
<0055> <0039> <0056> <003A> <0057> <003B> <0058> <003C> <0059> <003D> <005A> <003E> <005B> <003F> <005
C _
<0040> <005D> <0041> <005E> <0042> <005F> <0044> <0061> <0045> <0062> <0046> <0063> <0047> <0064> <004
8> <0065> <0049> <0066> <004A> <0067> <004B> <0068> <004C> <0069> <004D> <006A> <004E> <006B> <004F> <
006C> <0050> <006D> <0051> <006E> <0052> <006F> <0053> <0070> <0054> <0071> <0055> <0072> <0056> <0073
> <0057> <0074> <0058> <0075> <0059> <0076> <005A> <0077> <005B> <0078> <005C> <0079> <005D> <007A> <0
05E> <007B> <005F> <007C> <0060> <007D> <0083> <00B0> <0087> <2022> <0097> <00B5> <00B3> <201C> <00B4>
 <201D> <00D7> <02DC> <0101> <00B7> endbfchar endcmap CMapName currentdict /CMap defineresource pop en
d end
endstream
endobj
9 0 obj
[3 3 600 5 5 600 7 7 600 9 9 600 10 10 600 11 11 600 12 12 600 13 13 600 14 14 600 15 15 600 16 16 60
0 17 17 600 18 18 600 19 19 600 20 20 600 21 21 600 22 22 600 23 23 600 24 24 600 25 25 600 26 26 600
27 27 600 28 28 600 29 29 600 31 31 600 32 32 600 33 33 600 34 34 600 36 36 600 37 37 600 38 38 600 39
 39 600 40 40 600 41 41 600 42 42 600 43 43 600 44 44 600 46 46 600 47 47 600 48 48 600 49 49 600 50 5
0 600 51 51 600 52 52 600 53 53 600 54 54 600 55 55 600 56 56 600 57 57 600 58 58 600 59 59 600 60 60
600 61 61 600 62 62 600 63 63 600 64 64 600 65 65 600 66 66 600 68 68 600 69 69 600 70 70 600 71 71 60
0 72 72 600 73 73 600 74 74 600 75 75 600 76 76 600 77 77 600 78 78 600 79 79 600 80 80 600 81 81 600
82 82 600 83 83 600 84 84 600 85 85 600 86 86 600 87 87 600 88 88 600 89 89 600 90 90 600 91 91 600 92
 92 600 93 93 600 94 94 600 95 95 600 96 96 600 131 131 600 135 135 600 151 151 600 179 179 600 180 18
0 600 215 215 600 257 257 600]
endobj
6 0 obj
[-600 -300 600 832]
endobj
7 0 obj
600
endobj
2 0 obj
<<
/Count 12
/Kids [3 0 R 14 0 R 17 0 R 20 0 R 23 0 R 26 0 R 29 0 R 32 0 R 35 0 R 38 0 R 41 0 R 44 0 R]
/Type /Pages
>>
endobj
1 0 obj
<<
/Pages 2 0 R
/Type /Catalog
>>
endobj
47 0 obj
<<
/Author ()
/CreationDate (D:20250722150955+03'00')
/ModDate (D:20250722150955+03'00')
/Producer (Microsoft: Print To PDF)
/Title (Microsoft Visual Basic for Applications)
>>
endobj
xref
0 48
0000000000 65535 f
0000102290 00000 n

0000102153 00000 n
0000069543 00000 n
0000000009 00000 n
0000000035 00000 n
0000102097 00000 n
0000102134 00000 n
0000000058 00000 n
0000101132 00000 n
0000099438 00000 n
0000066510 00000 n
0000066982 00000 n
0000069498 00000 n
0000072143 00000 n
0000069706 00000 n
0000072098 00000 n
0000074809 00000 n
0000072307 00000 n
0000074764 00000 n
0000077493 00000 n
0000074973 00000 n
0000077448 00000 n
0000080302 00000 n
0000077657 00000 n
0000080257 00000 n
0000082998 00000 n
0000080466 00000 n
0000082953 00000 n
0000086209 00000 n
0000083162 00000 n
0000086164 00000 n
0000088825 00000 n
0000086373 00000 n
0000088780 00000 n
0000091205 00000 n
0000088989 00000 n
0000091160 00000 n
0000094523 00000 n
0000091369 00000 n
0000094478 00000 n
0000096976 00000 n
0000094687 00000 n
0000096931 00000 n
0000099274 00000 n
0000097140 00000 n
0000099229 00000 n
0000102339 00000 n
trailer
<<
/Info 47 0 R
/Root 1 0 R
/Size 48
>>
startxref
102533
%%EOF

```
Sub Macro1()
'
' Macro1 Macro
' visual basic atm program .sten object by system .event )hand
' "&chr(10)&"public class transaction box
' "&chr(10)&"const service as decimal =6.5
' "&chr(10)&"const pin as integer +9343
' "&chr(10)&"dim balance as decimal =150
' "&chr(10)&"private sub label 12_click (by sender System.object event arg handles labe
'
End Sub
Sub Macro2()
'
' Macro2 Macro
' type meter three phase ac static watt hous smart
' "&chr(10)&"metering algorith
' "&chr(10)&"accuracy  nomial voltage  mettering frequence metering const functionality current sensor
s energy pulse energy temper detection remote communication iec 62056 extrevm internal battery
'
    ActiveWindow.ActivePane.VerticalPercentScrolled = 205
    ActiveWindow.ActivePane.VerticalPercentScrolled = 146
    Selection.TypeText Text:= _
        "------------------------------------------------------------"
    Selection.TypeText Text:= _
        "------------------------------------------------------------"
    Selection.TypeText Text:="-------"
    Selection.TypeParagraph
    Selection.PasteAndFormat (wdFormatOriginalFormatting)
    ActiveWindow.ActivePane.VerticalPercentScrolled = 146
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
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    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.Paste
    ActiveDocument.Save
    ActiveWindow.ActivePane.VerticalPercentScrolled = 207
    ActiveWindow.ActivePane.VerticalPercentScrolled = 202
    ActiveWindow.ActivePane.VerticalPercentScrolled = 197
    ActiveWindow.ActivePane.LargeScroll Down:=1
    ActiveWindow.ActivePane.VerticalPercentScrolled = -75
    ActiveWindow.ActivePane.VerticalPercentScrolled = -41
    Windows("Doc8 drawing tshingombe fiston").Activate
    Windows("Doc2 drawing tshingombe").Activate
    ActiveWindow.ActivePane.VerticalPercentScrolled = 127
    ActiveWindow.Close
    ActiveWindow.Close
    ActiveWindow.Close
    ActiveWindow.Close
    ActiveWindow.Close
    ChangeFileOpenDirectory "C:\Users\Library SIX\Desktop\"
    ActiveDocument.SaveAs2 FileName:="Doc1 tshing.docx", FileFormat:= _
        wdFormatXMLDocument, LockComments:=False, Password:="", AddToRecentFiles _
```

```
Class1 - 2

        :=True, WritePassword:="", ReadOnlyRecommended:=False, EmbedTrueTypeFonts _
        :=False, SaveNativePictureFormat:=False, SaveFormsData:=False, _
        SaveAsAOCELetter:=False, CompatibilityMode:=15
    ActiveWindow.Close
    Application.Quit
End Sub
Sub Macro3()
'
' Macro3 Macro
' 170.{ " IF (X1=0)+(X2=0)+(X3=0)+(X4=0)+(X5=0)+(X6=0)+(X7=0)+(X8=)THEN "}  OR "SUB"_" CLICK"
' "&chr(10)&" "SELECT REGISTER .ELSE , CPU"=0 ,  ADRESSPIN = 000000000
' "&chr(10)&"180 END IF " IF (S1=0)+(S2=0)+(S3=0)+(S4=0)+(S5=0)+(S6=0)+(S7=0)+(S8=0)THEN "}  OR "SUB"_
" CLICK
' "&chr(10)&"EXECU
'
    Application.Run MacroName:="frm1"
End Sub
Sub Macro4()
'
' Macro4 Macro
' 170.{ " IF (X1=0)+(X2=0)+(X3=0)+(X4=0)+(X5=0)+(X6=0)+(X7=0)+(X8=0)THEN "}  OR "SUB"_" CLICK"
' "&chr(10)&" SELECT REGISTER .ELSE , CPU ,
' "&chr(10)&"180 END IF " IF (S1=1)+(S2=1)+(S3=1)+(S4=1)+(S5=1)+(S6=1)+(S7=1)+(S8=1)THEN "}  OR "SUB"_
" CLICK
' "&chr(10)&"EXECUTION LOOP
'

'
    Application.Run MacroName:="frm1"
    ActiveWindow.ActivePane.VerticalPercentScrolled = 119
    Selection.Copy
    Application.Run MacroName:="frm1"
End Sub
Sub Macro5()
'
' Macro5 Macro
' 10.INPUT X1
' "&chr(10)&"20. INPUT .X2
' "&chr(10)&"30. INPUT X3
' "&chr(10)&"40. INPUT X4
' "&chr(10)&"50,IN[UT X5
' "&chr(10)&"60. INPUT X6
' "&chr(10)&"60.INPUT .X7.
'

' "&chr(10)&" 70.OUTPUT  S1
' "&chr(10)&"80.OUTPUT.S2
' "&chr(10)&"90,OUTPUT S3
' "&chr(10)&"100.OUTPUT S4
' "&chr(10)&"110.OUTPUT S5
' "&chr(10)&"120 OUTPUT S6
' "&chr(10)&"130.OUTPUT S7
' "&chr(10)&"140.OUTPUT
' "&chr(10)&"150 SELECT REGISTER
' "&chr(10)&"150 OUTPUT HARDW
'
    Application.Run MacroName:="frm1"
End Sub
Sub frm1()
'
' frm1 Macro
'
'

End Sub
Sub Macro24()
'
' Macro24 Macro
'
' "&chr(10)&"   \(f(x,y)\) the partial derivatives with respect to \(x\)
' "&chr(10)&"
' "&chr(10)&"   Is denoted as \(\ frac{\ partial f }{ partial x}\) and with ,
' "&chr(10)&"
```

```
Class1 - 3

' "&chr(10)&"   Respect to \ ( y\) as \(\ frac {\ partial f }{\ partial ,y }\)
' "&chr(10)&"
' "&chr(10)&"   Examp : \[ funct \[ f( x,y)=x^2y+3xy^3\]
' "&chr(10)&"
' "&chr(10)&"   * Calcu
'
End Sub
Sub Macro6()
'
' Macro6 Macro
'
' "&chr(10)&"   \(f(x,y)\) the partial derivatives with respect to \(x\)
' "&chr(10)&"
' "&chr(10)&"   Is denoted as \(\ frac{\ partial f }{ partial x}\) and with ,
' "&chr(10)&"
' "&chr(10)&"   Respect to \ ( y\) as \(\ frac {\ partial f }{\ partial ,y }\)
' "&chr(10)&"
' "&chr(10)&"   Examp : \[ funct \[ f( x,y)=x^2y+3xy^3\]
' "&chr(10)&"
' "&chr(10)&"   * Calcu
'
End Sub
Sub Macro7()
'
' Macro7 Macro
'
' "&chr(10)&"   \( f(x,y)\), the total derivatives \ ( DF \) is given by : \[ DF = \ frac { \ partial
f }{\ partial x }sx +\ frac{ \ partial }{ \ partial y } St \ ]
' "&chr(10)&"
' "&chr(10)&"   Using the previous : \ [ DF = 2xy+ 2y^2)
' "&chr(10)&"
'

'
End Sub
Sub Macro8()
'
' Macro8 Macro
'   1. Fourier series : the Fourier series and cosine function for periodic function \ ( ft)\) with pe
riod ( t) the Fourier series is.
' "&chr(10)&"
' "&chr(10)&"   f(t)= a 0+\ sum ${n= 1}{\ infty}
' "&chr(10)&"
' "&chr(10)&"   \ left + a_ n \ cos \ left \ left + } frac { 2\ pi not }{T}
' "&chr(10)&"
' "&chr(10)&"   \ right ) + b _
'
End Sub
Sub Macro9()
'
' Macro9 Macro
'
' "&chr(10)&"   .\[ R-{\ text t{ total }}= R1+R2+R3\]
' "&chr(10)&"
' "&chr(10)&"   . Substituting the values \[ R - { \ text { total }}= 10\.\ text , { ohms }+ 20\, text
{ ohms}+30\, text {ohms}\], calculating ,\[ R - { \ text { total /}} = 60\\ text { ohm }\]
'

'
End Sub
Sub Macro10()
'
' Macro10 Macro
' 0
' "&chr(10)&"   [ Z =\ sqrt{R^ 2+(x-L-X_C)^2}\]
' "&chr(10)&"
' "&chr(10)&"   Where _\(x_L= 2\ pi f L \ Pi .f.c\} ( capacitive reactance ,
' "&chr(10)&"
' "&chr(10)&"   -\(X_C)=\ frac ,{1}{2\ pi.f.c}\}( capacitive reactance.
' "&chr(10)&"
' "&chr(10)&"   -|(fI) is the frequency in Hertz ( z)
' "&chr(10)&"
' "&chr(10)&"   -\(L/) is the inductance  in Hertz ( Hz )
```

```
Class1 - 4

'
End Sub
Sub Macro11()
'
' Macro11 Macro
'   The power factor ,of is defined as the ratio of real power to apparent power , \ [ \ text power fa
ctor ,of )}=\ frac ,{P}{s}\]
' "&chr(10)&"
' "&chr(10)&"   Where : .\(P\)= real power ( w)
' "&chr(10)&"
' "&chr(10)&"   .\(S\\)= apparent power ,( VA)
'

'
End Sub
Sub Macro12()
'
' Macro12 Macro
'   \[S=\sqt{P^2+Q^2}\]
' "&chr(10)&"
' "&chr(10)&"   .value .real power (\(P\))=500w,
' "&chr(10)&"
' "&chr(10)&"   .reactive power(\Q\))=300VAR
' "&chr(10)&"
' "&chr(10)&"   - calculate apparent power ( s)\[,S=\sqt{P^2t
'

'
End Sub
Sub Macro13()
'
' Macro13 Macro
'
' "&chr(10)&"   -where .
' "&chr(10)&"
' "&chr(10)&"   |(a-O=| frac {1}{T} int- 0^ f(t)\dt)
' "&chr(10)&"
' "&chr(10)&"   .\+a-n = frac {2}{T} int_O^Y f ( t) \ cos\ left ( \ frac { 2\ Pi .n t}{ t } rigth \, D
T have simple square wave function.
'

'
End Sub
Sub Macro14()
'
' Macro14 Macro
'   - the Fourier transform is used to convert a time domain signal into it frequency domain represent
 formula : transform \ F ( \ omega )\( of a continuous signal \ ( f(t) , e^{- j \ omega }\ dt\]
' "&chr(10)&"
' "&chr(10)&"   - where . \( f+ \ omega )\) = Fourier transform of the
'
End Sub
Sub Macro15()
'
' Macro15 Macro
'   - the la place trans is another transformation used to analyse linear time _ invariant system form
ula for the la place transform \ F( S)\) of function \ ( f(t)\) is \[f(s)=\ into -{O} infty } ,  f( t
) ,, e{-st } St \]
' "&chr(10)&"
' "&chr(10)&"   - \( f( s)\)= Laplace transfor
'
End Sub
Sub Macro16()
'
' Macro16 Macro
'   \|[ | dot { x}(t}=Ax(t)+By(t)\]\[y(t)=(x(t)+du(t)\]
' "&chr(10)&"
' "&chr(10)&"   Where :
' "&chr(10)&"
' "&chr(10)&"   -|(x(t)\)= state vector
' "&chr(10)&"
' "&chr(10)&"   .|(u(t)\)= Input vector
' "&chr(10)&"
```

```
Class1 - 5

' "&chr(10)&"   .\ (y( t) \)= output vector .
' "&chr(10)&"
' "&chr(10)&"   .(A\)= System .
' "&chr(10)&"
' "&chr(10)&"   .\(B\)= input matrix .
' "&chr(10)&"
' "&chr(10)&"   .|(C\) = Output matrix .
' "&chr(10)&"
' "&chr(10)&"   .\( D \ )
'
End Sub
Sub Macro17()
'
' Macro17 Macro
'   1. DC machines : speed ( n ) the speed of DC motor can be calculated using formula \[N=\ frac { V-
1\ CDOT -R}{ CDOT \ Phi }\]
' "&chr(10)&"
' "&chr(10)&"   - where \ ( N\ ) = speed in Rpm ( revolution perminute .
' "&chr(10)&"
' "&chr(10)&"   - \ ( N\)= supply voltage ( v ) ,
' "&chr(10)&"
' "&chr(10)&"   -\(i\)= armature curr
'
End Sub
Sub Macro18()
'
' Macro18 Macro
'   14*. Mass balance equation : the general mass balance equation can expressed as :
' "&chr(10)&"
' "&chr(10)&"   \[\ text { input }-\ text { output }+\ { generation } \ text  consumption}=\ text { ac
cumulation \ ]
' "&chr(10)&"
'

'
End Sub
Sub Macro19()
'
' Macro19 Macro
'   - for a steady state process ( where accumulation is zero the equation simplified to \[\ text { in
put}\ text { output}\tezt Generation}-\ text { consumption}=\]
'

'
End Sub
Sub Macro20()
'
' Macro20 Macro
'   - for a steady state process ( where accumulation is zero the equation simplified to \[\ text { in
put}\ text { output}\tezt Generation}-\ text { consumption}=\]
'

'
End Sub
Sub Macro21()
'
' Macro21 Macro
' 14.1. master  derivatives : electrical derivatives for a simple electrical circuit with an induction
 ,\(L\) and  a resistor \( R\/ the  voltage across the inductance can be by : \ [ V-L { L\ frac {Di}{S
t}\]
'

' "&chr(10)&"Where \( v-L)= voltage accross the inductor.
'
End Sub
Sub Macro22()
'
' Macro22 Macro
'   Eingenvalue  analysis for a system represented by a matrix the eingenvalue can indicate stability
,if all aigenvalue have negative real part  the involved finding a lyapunov ,( function \(V(x)\) , suc
h that \(V(X)>0\) and ,,\(\dot{(V)(X)<O\) for stabilit
'
End Sub
```

```
Class1 - 6

Sub Macro23()
'
' Macro23 Macro
'   - r esponse request get ,( f" http:// API electricity meter comparable ,/ { meter _ I'd  "} return
 response .jsob ( )
'

'
End Sub
Sub Macro25()
'
' Macro25 Macro
'   _1 force balance the net force acting on the system,express as \F-{\text { net }}=F-{\ text { pneu
matic}}++ ,
' "&chr(10)&"
' "&chr(10)&"   F-{\text { hydraulic }}- , F {\ text { damping }}-F{\ text ( inertial }}
'

'
End Sub
Sub Macro26()
'
' Macro26 Macro
'   To derive the relationship force ,motion. ,power ,energy .
' "&chr(10)&"
' "&chr(10)&"   \[F= m\ CDOT a \ ] where.
' "&chr(10)&"
' "&chr(10)&"   .\(F\) = force ( N) , | \ ( m \)= mass ( kg ) |\(a)= acceleration ,( m/s.s)
'

'
End Sub
Sub Macro27()
'
' Macro27 Macro
'   Kinetic energy ,( k.E) is the energy of an object du it's motion .
' "&chr(10)&"
' "&chr(10)&"   \[K.E= \frac {I}{2}.m.V^2\..
' "&chr(10)&"
'

'
End Sub
Sub Macro28()
'
' Macro28 Macro
'   Example: Grades: [70,75,80,85,90][70, 75, 80, 85, 90], N=5N = 5:
' "&chr(10)&"   1. Mean:
' "&chr(10)&"
' "&chr(10)&"   μ=70+75+80+85+905=80.\mu = \frac{70 + 75 + 80 + 85 + 90}{5} = 80.
' "&chr(10)&"   2. Variance:
' "&chr(10)&"
' "&chr(10)&"   s2=(70-80)2+(75-80)2+(80-80)2+(85-80)2+(90-80)25=50.\sigma^2 = \frac{(70-80)^2 + (75-8
0
'
End Sub
Sub Macro29()
'
' Macro29 Macro
' a) Energy in Capacitors
'

' "&chr(10)&"Formula: $$ E = \frac{1}{2} C V^2 $$ Where:
' "&chr(10)&"· CC: Capacitance (Farads),
' "&chr(10)&"· VV: Voltage (Volts).
'

' "&chr(10)&"Example: For a 10 μF10 \, \mu F capacitor with V=240VV = 240V: $$ E = \frac{1}{2} \times
10 \times 10^{-6} \times 240^2 = 0.288
'
End Sub
Sub Macro30()
'
```

```
Class1 - 7

' Macro30 Macro
'
' "&chr(10)&"   B=?0Tc(t) dt,B = \int_0^T c(t) \, dt,
' "&chr(10)&"
' "&chr(10)&"   where c(t)c(t): cost rate over time tt.
' "&chr(10)&"
' "&chr(10)&"   Example: For c(t)=200-20tc(t) = 200 - 20t over [0,5][0, 5]:
' "&chr(10)&"   1. Compute:
' "&chr(10)&"
' "&chr(10)&"   \[ B = \int_0^5 (200 - 20t) \, dt = \left[200t - 10t2\right]_05. \]
' "&chr(10)&"   2. Result:
' "&chr(10)&"
'
End Sub
Sub Macro31()
'
' Macro31 Macro
'   For time-dependent power P(t)P(t), energy is: $$ E = \int_{t_1}^{t_2} P(t) \, dt $$. If P(t)=100si
n?(2pt)P(t) = 100 \sin(2\pi t), calculate energy over t=0t = 0 to t=1st = 1s: $$ E = \int_0^1 100 \sin
(2\pi t) \, dt = \left[-\frac{100}{2\pi} \cos(2\pi t)\
'
End Sub
```

```
Sub Macro1()
'
' Macro1 Macro
' visual basic atm program .sten object by system .event )hand
' "&chr(10)&"public class transaction box
' "&chr(10)&"const service as decimal =6.5
' "&chr(10)&"const pin as integer +9343
' "&chr(10)&"dim balance as decimal =150
' "&chr(10)&"private sub label 12_click (by sender System.object event arg handles labe
'
End Sub
Sub Macro2()
'
' Macro2 Macro
' type meter three phase ac static watt hous smart
' "&chr(10)&"metering algorith
' "&chr(10)&"accuracy  nomial voltage  mettering frequence metering const functionality current sensor
s energy pulse energy temper detection remote communication iec 62056 extrevm internal battery
'
    ActiveWindow.ActivePane.VerticalPercentScrolled = 205
    ActiveWindow.ActivePane.VerticalPercentScrolled = 146
    Selection.TypeText Text:= _
        "------------------------------------------------------------"
    Selection.TypeText Text:= _
        "------------------------------------------------------------"
    Selection.TypeText Text:="-------"
    Selection.TypeParagraph
    Selection.PasteAndFormat (wdFormatOriginalFormatting)
    ActiveWindow.ActivePane.VerticalPercentScrolled = 146
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
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    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.TypeParagraph
    Selection.Paste
    ActiveDocument.Save
    ActiveWindow.ActivePane.VerticalPercentScrolled = 207
    ActiveWindow.ActivePane.VerticalPercentScrolled = 202
    ActiveWindow.ActivePane.VerticalPercentScrolled = 197
    ActiveWindow.ActivePane.LargeScroll Down:=1
    ActiveWindow.ActivePane.VerticalPercentScrolled = -75
    ActiveWindow.ActivePane.VerticalPercentScrolled = -41
    Windows("Doc8 drawing tshingombe fiston").Activate
    Windows("Doc2 drawing tshingombe").Activate
    ActiveWindow.ActivePane.VerticalPercentScrolled = 127
    ActiveWindow.Close
    ActiveWindow.Close
    ActiveWindow.Close
    ActiveWindow.Close
    ActiveWindow.Close
    ChangeFileOpenDirectory "C:\Users\Library SIX\Desktop\"
    ActiveDocument.SaveAs2 FileName:="Doc1 tshing.docx", FileFormat:= _
        wdFormatXMLDocument, LockComments:=False, Password:="", AddToRecentFiles _
```

```
        :=True, WritePassword:="", ReadOnlyRecommended:=False, EmbedTrueTypeFonts _
        :=False, SaveNativePictureFormat:=False, SaveFormsData:=False, _
        SaveAsAOCELetter:=False, CompatibilityMode:=15
    ActiveWindow.Close
    Application.Quit
End Sub
Sub Macro3()
'
' Macro3 Macro
' 170.{ " IF (X1=0)+(X2=0)+(X3=0)+(X4=0)+(X5=0)+(X6=0)+(X7=0)+(X8=)THEN "}  OR "SUB"_" CLICK"
' "&chr(10)&" "SELECT REGISTER .ELSE , CPU"=0 ,  ADRESSPIN = 000000000
' "&chr(10)&"180 END IF " IF (S1=0)+(S2=0)+(S3=0)+(S4=0)+(S5=0)+(S6=0)+(S7=0)+(S8=0)THEN "}  OR "SUB"_
" CLICK
' "&chr(10)&"EXECU
'
    Application.Run MacroName:="frm1"
End Sub
Sub Macro4()
'
' Macro4 Macro
' 170.{ " IF (X1=0)+(X2=0)+(X3=0)+(X4=0)+(X5=0)+(X6=0)+(X7=0)+(X8=0)THEN "}  OR "SUB"_" CLICK"
' "&chr(10)&" SELECT REGISTER .ELSE , CPU ,
' "&chr(10)&"180 END IF " IF (S1=1)+(S2=1)+(S3=1)+(S4=1)+(S5=1)+(S6=1)+(S7=1)+(S8=1)THEN "}  OR "SUB"_
" CLICK
' "&chr(10)&"EXECUTION LOOP
'

'
    Application.Run MacroName:="frm1"
    ActiveWindow.ActivePane.VerticalPercentScrolled = 119
    Selection.Copy
    Application.Run MacroName:="frm1"
End Sub
Sub Macro5()
'
' Macro5 Macro
' 10.INPUT X1
' "&chr(10)&"20. INPUT .X2
' "&chr(10)&"30. INPUT X3
' "&chr(10)&"40. INPUT X4
' "&chr(10)&"50,IN[UT X5
' "&chr(10)&"60. INPUT X6
' "&chr(10)&"60.INPUT .X7.
'

' "&chr(10)&" 70.OUTPUT  S1
' "&chr(10)&"80.OUTPUT.S2
' "&chr(10)&"90,OUTPUT S3
' "&chr(10)&"100.OUTPUT S4
' "&chr(10)&"110.OUTPUT S5
' "&chr(10)&"120 OUTPUT S6
' "&chr(10)&"130.OUTPUT S7
' "&chr(10)&"140.OUTPUT
' "&chr(10)&"150 SELECT REGISTER
' "&chr(10)&"150 OUTPUT HARDW
'
    Application.Run MacroName:="frm1"
End Sub
Sub frm1()
'
' frm1 Macro
'
'

End Sub
Sub Macro24()
'
' Macro24 Macro
'
' "&chr(10)&"   \(f(x,y)\) the partial derivatives with respect to \(x\)
' "&chr(10)&"
' "&chr(10)&"   Is denoted as \(\ frac{\ partial f }{ partial x}\) and with ,
' "&chr(10)&"
```

```
Class5 - 3

' "&chr(10)&"   Respect to \ ( y\) as \(\ frac {\ partial f }{\ partial ,y }\)
' "&chr(10)&"
' "&chr(10)&"   Examp : \[ funct \[ f( x,y)=x^2y+3xy^3\]
' "&chr(10)&"
' "&chr(10)&"   * Calcu
'
End Sub
Sub Macro6()
'
' Macro6 Macro
'
' "&chr(10)&"   \(f(x,y)\) the partial derivatives with respect to \(x\)
' "&chr(10)&"
' "&chr(10)&"   Is denoted as \(\ frac{\ partial f }{ partial x}\) and with ,
' "&chr(10)&"
' "&chr(10)&"   Respect to \ ( y\) as \(\ frac {\ partial f }{\ partial ,y }\)
' "&chr(10)&"
' "&chr(10)&"   Examp : \[ funct \[ f( x,y)=x^2y+3xy^3\]
' "&chr(10)&"
' "&chr(10)&"   * Calcu
'
End Sub
Sub Macro7()
'
' Macro7 Macro
'
' "&chr(10)&"   \( f(x,y)\), the total derivatives \ ( DF \) is given by : \[ DF = \ frac { \ partial
f }{\ partial x }sx +\ frac{ \ partial }{ \ partial y } St \ ]
' "&chr(10)&"
' "&chr(10)&"   Using the previous : \ [ DF = 2xy+ 2y^2)
' "&chr(10)&"
'

'
End Sub
Sub Macro8()
'
' Macro8 Macro
'   1. Fourier series : the Fourier series and cosine function for periodic function \ ( ft)\) with pe
riod ( t) the Fourier series is.
' "&chr(10)&"
' "&chr(10)&"   f(t)= a 0+\ sum ${n= 1}{\ infty}
' "&chr(10)&"
' "&chr(10)&"   \ left + a_ n \ cos \ left \ left + } frac { 2\ pi not }{T}
' "&chr(10)&"
' "&chr(10)&"   \ right ) + b _
'
End Sub
Sub Macro9()
'
' Macro9 Macro
'
' "&chr(10)&"   .\[ R-{\ text t{ total }}= R1+R2+R3\]
' "&chr(10)&"
' "&chr(10)&"   . Substituting the values \[ R - { \ text { total }}= 10\.\ text , { ohms }+ 20\, text
{ ohms}+30\, text {ohms}\], calculating ,\[ R - { \ text { total /}} = 60\\ text { ohm }\]
'

'
End Sub
Sub Macro10()
'
' Macro10 Macro
' 0
' "&chr(10)&"   [ Z =\ sqrt{R^ 2+(x-L-X_C)^2}\]
' "&chr(10)&"
' "&chr(10)&"   Where _\(x_L= 2\ pi f L \ Pi .f.c\} ( capacitive reactance ,
' "&chr(10)&"
' "&chr(10)&"   -\(X_C)=\ frac ,{1}{2\ pi.f.c}\}( capacitive reactance.
' "&chr(10)&"
' "&chr(10)&"   -|(fI) is the frequency in Hertz ( z)
' "&chr(10)&"
' "&chr(10)&"   -\(L/) is the inductance  in Hertz ( Hz )
```

```
Class5 - 4

'
End Sub
Sub Macro11()
'
' Macro11 Macro
'   The power factor ,of is defined as the ratio of real power to apparent power , \ [ \ text power fa
ctor ,of )}=\ frac ,{P}{s}\]
' "&chr(10)&"
' "&chr(10)&"   Where : .\(P\)= real power ( w)
' "&chr(10)&"
' "&chr(10)&"   .\(S\\)= apparent power ,( VA)
'

'
End Sub
Sub Macro12()
'
' Macro12 Macro
'   \[S=\sqt{P^2+Q^2}\]
' "&chr(10)&"
' "&chr(10)&"   .value .real power (\(P\))=500w,
' "&chr(10)&"
' "&chr(10)&"   .reactive power(\Q\))=300VAR
' "&chr(10)&"
' "&chr(10)&"   - calculate apparent power ( s)\[,S=\sqt{P^2t
'

'
End Sub
Sub Macro13()
'
' Macro13 Macro
'
' "&chr(10)&"   -where .
' "&chr(10)&"
' "&chr(10)&"   |(a-O=| frac {1}{T} int- 0^ f(t)\dt)
' "&chr(10)&"
' "&chr(10)&"   .\+a-n = frac {2}{T} int_O^Y f ( t) \ cos\ left ( \ frac { 2\ Pi .n t}{ t } rigth \, D
T have simple square wave function.
'

'
End Sub
Sub Macro14()
'
' Macro14 Macro
'   - the Fourier transform is used to convert a time domain signal into it frequency domain represent
 formula : transform \ F ( \ omega )\( of a continuous signal \ ( f(t) , e^{- j \ omega }\ dt\]
' "&chr(10)&"
' "&chr(10)&"   - where . \( f+ \ omega )\) = Fourier transform of the
'
End Sub
Sub Macro15()
'
' Macro15 Macro
'   - the la place trans is another transformation used to analyse linear time _ invariant system form
ula for the la place transform \ F( S)\) of function \ ( f(t)\) is \[f(s)=\ into -{O} infty } ,  f( t
) ,, e{-st } St \]
' "&chr(10)&"
' "&chr(10)&"   - \( f( s)\)= Laplace transfor
'
End Sub
Sub Macro16()
'
' Macro16 Macro
'   \|[ | dot { x}(t}=Ax(t)+By(t)\]\[y(t)=(x(t)+du(t)\]
' "&chr(10)&"
' "&chr(10)&"   Where :
' "&chr(10)&"
' "&chr(10)&"   -|(x(t)\)= state vector
' "&chr(10)&"
' "&chr(10)&"   .|(u(t)\)= Input vector
' "&chr(10)&"
```

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' "&chr(10)&"   .\ (y( t) \)= output vector .
' "&chr(10)&"
' "&chr(10)&"   .(A\)= System .
' "&chr(10)&"
' "&chr(10)&"   .\(B\)= input matrix .
' "&chr(10)&"
' "&chr(10)&"   .|(C\) = Output matrix .
' "&chr(10)&"
' "&chr(10)&"   .\( D \ )
'
End Sub
Sub Macro17()
'
' Macro17 Macro
'   1. DC machines : speed ( n ) the speed of DC motor can be calculated using formula \[N=\ frac { V-
1\ CDOT -R}{ CDOT \ Phi }\]
' "&chr(10)&"
' "&chr(10)&"   - where \ ( N\ ) = speed in Rpm ( revolution perminute .
' "&chr(10)&"
' "&chr(10)&"   - \ ( N\)= supply voltage ( v ) ,
' "&chr(10)&"
' "&chr(10)&"   -\(i\)= armature curr
'
End Sub
Sub Macro18()
'
' Macro18 Macro
'   14*. Mass balance equation : the general mass balance equation can expressed as :
' "&chr(10)&"
' "&chr(10)&"   \[\ text { input }-\ text { output }+\ { generation } \ text  consumption}=\ text { ac
cumulation \ ]
' "&chr(10)&"
'

'
End Sub
Sub Macro19()
'
' Macro19 Macro
'   - for a steady state process ( where accumulation is zero the equation simplified to \[\ text { in
put}\ text { output}\tezt Generation}-\ text { consumption}=\]
'

'
End Sub
Sub Macro20()
'
' Macro20 Macro
'   - for a steady state process ( where accumulation is zero the equation simplified to \[\ text { in
put}\ text { output}\tezt Generation}-\ text { consumption}=\]
'

'
End Sub
Sub Macro21()
'
' Macro21 Macro
' 14.1. master  derivatives : electrical derivatives for a simple electrical circuit with an induction
 ,\(L\) and  a resistor \( R\/ the  voltage across the inductance can be by : \ [ V-L { L\ frac {Di}{S
t}\]
'

' "&chr(10)&"Where \( v-L)= voltage accross the inductor.
'
End Sub
Sub Macro22()
'
' Macro22 Macro
'   Eingenvalue  analysis for a system represented by a matrix the eingenvalue can indicate stability
,if all aigenvalue have negative real part  the involved finding a lyapunov ,( function \(V(x)\) , suc
h that \(V(X)>0\) and ,,\(\dot{(V)(X)<O\) for stabilit
'
End Sub
```

```
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Sub Macro23()
'
' Macro23 Macro
'   - r esponse request get ,( f" http:// API electricity meter comparable ,/ { meter _ I'd  "} return
 response .jsob ( )
'

'
End Sub
Sub Macro25()
'
' Macro25 Macro
'   _1 force balance the net force acting on the system,express as \F-{\text { net }}=F-{\ text { pneu
matic}}++ ,
' "&chr(10)&"
' "&chr(10)&"   F-{\text { hydraulic }}- , F {\ text { damping }}-F{\ text ( inertial }}
'

'
End Sub
Sub Macro26()
'
' Macro26 Macro
'   To derive the relationship force ,motion. ,power ,energy .
' "&chr(10)&"
' "&chr(10)&"   \[F= m\ CDOT a \ ] where.
' "&chr(10)&"
' "&chr(10)&"   .\(F\) = force ( N) , | \ ( m \)= mass ( kg ) |\(a)= acceleration ,( m/s.s)
'

'
End Sub
Sub Macro27()
'
' Macro27 Macro
'   Kinetic energy ,( k.E) is the energy of an object du it's motion .
' "&chr(10)&"
' "&chr(10)&"   \[K.E= \frac {I}{2}.m.V^2\..
' "&chr(10)&"
'

'
End Sub
Sub Macro28()
'
' Macro28 Macro
'   Example: Grades: [70,75,80,85,90][70, 75, 80, 85, 90], N=5N = 5:
' "&chr(10)&"   1. Mean:
' "&chr(10)&"
' "&chr(10)&"   μ=70+75+80+85+905=80.\mu = \frac{70 + 75 + 80 + 85 + 90}{5} = 80.
' "&chr(10)&"   2. Variance:
' "&chr(10)&"
' "&chr(10)&"   s2=(70-80)2+(75-80)2+(80-80)2+(85-80)2+(90-80)25=50.\sigma^2 = \frac{(70-80)^2 + (75-8
0
'
End Sub
Sub Macro29()
'
' Macro29 Macro
' a) Energy in Capacitors
'

' "&chr(10)&"Formula: $$ E = \frac{1}{2} C V^2 $$ Where:
' "&chr(10)&"· CC: Capacitance (Farads),
' "&chr(10)&"· VV: Voltage (Volts).
'

' "&chr(10)&"Example: For a 10 μF10 \, \mu F capacitor with V=240VV = 240V: $$ E = \frac{1}{2} \times
10 \times 10^{-6} \times 240^2 = 0.288
'
End Sub
Sub Macro30()
'
```

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' Macro30 Macro
'
' "&chr(10)&"   B=?0Tc(t) dt,B = \int_0^T c(t) \, dt,
' "&chr(10)&"
' "&chr(10)&"   where c(t)c(t): cost rate over time tt.
' "&chr(10)&"
' "&chr(10)&"   Example: For c(t)=200-20tc(t) = 200 - 20t over [0,5][0, 5]:
' "&chr(10)&"   1. Compute:
' "&chr(10)&"
' "&chr(10)&"   \[ B = \int_0^5 (200 - 20t) \, dt = \left[200t - 10t2\right]_05. \]
' "&chr(10)&"   2. Result:
' "&chr(10)&"
'
End Sub
Sub Macro31()
'
' Macro31 Macro
'   For time-dependent power P(t)P(t), energy is: $$ E = \int_{t_1}^{t_2} P(t) \, dt $$. If P(t)=100si
n?(2pt)P(t) = 100 \sin(2\pi t), calculate energy over t=0t = 0 to t=1st = 1s: $$ E = \int_0^1 100 \sin
(2\pi t) \, dt = \left[-\frac{100}{2\pi} \cos(2\pi t)\
'
End Sub
Sub Macro32()
'
' Macro32 Macro
' 5. Predictive Analytics for Crime Prevention
' "&chr(10)&"Using linear regression to predict crime patterns:
' "&chr(10)&"
' "&chr(10)&"y=mx+b,y = mx + b,
' "&chr(10)&"where:
' "&chr(10)&"· yy: Predicted crime rate,
'
End Sub
Sub Macro33()
'
' Macro33 Macro
' Example: If m=0.02 crimes/personm = 0.02 \, \text{crimes/person}, b=10b = 10:
' "&chr(10)&"1. For x=1000x = 1000:
' "&chr(10)&"
' "&chr(10)&"y=0.02·1000+10=30 crimes.y = 0.02 \cdot 1000 + 10 = 30 \, \text{crimes}.
'

'
End Sub
Sub Macro34()
'
' Macro34 Macro
' Applications in Crime Resolution and Prevention
' "&chr(10)&"1. Forensic Investigations:
' "&chr(10)&"o Use ballistic and decay models to reconstruct crime scenes.
' "&chr(10)&"2. Crime Scene Management:
' "&chr(10)&"o Employ area estimation to secure and document crime perimeters.
' "&chr(10)&"3. Predictive
'
End Sub
Sub Macro35()
'
' Macro35 Macro
' 1. Evidence Decay Over Time Using Exponential Models
' "&chr(10)&"Physical evidence, such as DNA or chemical residues, decays over time, which can be model
ed using exponential decay:
' "&chr(10)&"
' "&chr(10)&"C(t)=C0e-?t,C(t) = C_
'
End Sub
Sub Macro36()
'
' Macro36 Macro
'
' "&chr(10)&"y57.7-0.27=57.43 m.y \approx 57.7 - 0.27 = 57.43 \, \text{m}.
' "&chr(10)&"3. Area Estimation for Crime Scene Management
' "&chr(10)&"Using calculus, calculate the area of irregular crime scene perimeters. Divide the bounda
ry into segments described by functions, and integ
```

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'
End Sub
Sub Macro37()
'
' Macro37 Macro
' 4. Surveillance Analysis Using Camera Rotation
' "&chr(10)&"The angular velocity of a surveillance camera can be modeled as:
' "&chr(10)&"
' "&chr(10)&"?(t)=?t+12at2,\theta(t) = \omega t + \frac{1}{2} \alpha t^2,
' "&chr(10)&"where:
' "&chr(10)&"· ?(t)\theta(t): Angle rotated,
' "&chr(10)&"· ?\omega: Initial angular vel
'
End Sub
Sub Macro38()
'
' Macro38 Macro
' 1. Management Information Systems in Policing
' "&chr(10)&"Background:
' "&chr(10)&"· Management Information Systems (MIS) in policing are designed to collect, analyze, and
disseminate crime data for decision-making and resource allocation.
' "&chr(10)&"· Applications include crime mappi
'
End Sub
Sub Macro39()
'
' Macro39 Macro
' Applied Policing and Crime Resolution
'
End Sub
Sub Macro40()
'
' Macro40 Macro
' 2. Investigative Techniques
' "&chr(10)&"•?Key Concepts:
' "&chr(10)&"o Conducting preliminary investigations.
' "&chr(10)&"o Using surveillance and undercover operations.
'

'
End Sub
Sub Macro41()
'
' Macro41 Macro
' 3. Evidence Handling and Analysis
' "&chr(10)&"•?Principles:
' "&chr(10)&"o Proper collection, labeling, and storage of evidence.
'

'
End Sub
Sub Macro42()
'
' Macro42 Macro
' 4. Legal Framework
' "&chr(10)&"•?Key Topics:
' "&chr(10)&"o Understanding the Criminal Procedure Act and Evidence Act.
'

'
End Sub
Sub Macro43()
'
' Macro43 Macro
' Applications in Law Enforcement
' "&chr(10)&"1. Forensic Investigation:
' "&chr(10)&"o Analyze evidence to reconstruct crime scenes.
' "&chr(10)&"2. Criminal Profiling:
' "&chr(10)&"o Use psychological and behavioral analysis to identify suspects.
' "&chr(10)&"3. Community Engagement:
'

'
```

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End Sub
Sub Macro44()
'
' Macro44 Macro
' 3. Area Estimation for Crime Scene Management
' "&chr(10)&"Using calculus, calculate the area of irregular crime scene perimeters. Divide the bounda
ry into segments described by functions, and integrate:
' "&chr(10)&"
' "&chr(10)&"A=?x1x2y(x) dx.A = \int_{x_1}^{x_2} y(x) \, dx.
'

'
End Sub
Sub Macro45()
'
' Macro45 Macro
' 5. Predictive Analytics for Crime Prevention
' "&chr(10)&"Using linear regression to predict crime patterns:
' "&chr(10)&"
' "&chr(10)&"y=mx+b,y = mx + b,
' "&chr(10)&"where:
' "&chr(10)&"•?yy: Predicted crime rate,
' "&chr(10)&"•?xx: Variable (e.g., population density),
' "&chr(10)&"•?mm: Slope of the trendline,
' "&chr(10)&"•?bb: Intercept.
'

'
    ActiveWindow.ActivePane.VerticalPercentScrolled = -145
End Sub
Sub Macro46()
'
' Macro46 Macro
' 5. Predictive Analytics for Crime Prevention
' "&chr(10)&"Using linear regression to predict crime patterns:
' "&chr(10)&"
' "&chr(10)&"y=mx+b,y = mx + b,
' "&chr(10)&"where:
' "&chr(10)&"•?yy: Predicted crime rate,
' "&chr(10)&"•?xx: Variable (e.g., population density),
' "&chr(10)&"•?mm: Slope of the trendline,
' "&chr(10)&"•?bb: Intercept.
'

'
End Sub
Sub Macro47()
'
' Macro47 Macro
' 2. Incident Collision Scenarios
' "&chr(10)&"Background:
' "&chr(10)&"•?Focuses on investigating road traffic collisions to determine causes and prevent future
 incidents.
' "&chr(10)&"•?Includes analyzing human, vehicle, and environmental factors.
'

'
    ActiveWindow.ActivePane.SmallScroll Down:=23
End Sub
Sub Macro48()
'
' Macro48 Macro
' 2. Incident Collision Scenarios
' "&chr(10)&"Background:
' "&chr(10)&"•?Focuses on investigating road traffic collisions to determine causes and prevent future
 incidents.
' "&chr(10)&"•?Includes analyzing human, vehicle, and environmental factors.
'

'
End Sub
Sub Macro49()
'
```

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' Macro49 Macro
' 4. Community Policing and Communication Skills
' "&chr(10)&"Background:
' "&chr(10)&"•?Community policing emphasizes collaboration between police and communities to solve pro
blems and build trust.
' "&chr(10)&"•?Effective communication skills are essential for engaging with diverse populati
'
End Sub
Sub Macro50()
'
' Macro50 Macro
' 5. Operational Performance in Traffic Management
' "&chr(10)&"Background:
' "&chr(10)&"•?Traffic management involves optimizing road safety and flow through enforcement and edu
cation.
' "&chr(10)&"•?Operational performance measures include response times and accident reduction rates.
' "&chr(10)&"Exper
'
End Sub
Sub Macro51()
'
' Macro51 Macro
' 6. Principles of Police Investigation
' "&chr(10)&"Background:
' "&chr(10)&"•?Investigative principles include evidence preservation, chain of custody, and impartial
ity.
' "&chr(10)&"•?Focuses on systematic approaches to solving crimes.
' "&chr(10)&"Experimental Applications:
' "&chr(10)&"•?Conduct mock crime scen
'
End Sub
Sub Macro52()
'
' Macro52 Macro
' 7. Study Material for Police Firearms
' "&chr(10)&"Background:
' "&chr(10)&"•?Covers firearm handling, safety, and competency testing.
' "&chr(10)&"•?Includes theoretical knowledge and practical training.
' "&chr(10)&"Experimental Applications:
' "&chr(10)&"•?Practice firearm handling and target shooting in contro
'
End Sub
Sub Macro53()
'
' Macro53 Macro
' 1. Management Information Systems (MIS): Optimizing Police Patrol
' "&chr(10)&"•?Crime Hotspot Modeling Using Integrals: Crime density in a region can be modeled as a d
ensity function f(x,y)f(x, y), where xx and yy are spatial coordinates.
' "&chr(10)&"o Total crime density in a
'
End Sub
Sub Macro54()
'
' Macro54 Macro
'
' "&chr(10)&"D=?02p?02(r2) r dr d?.D = \int_0^{2\pi} \int_0^2 (r^2) \, r \, dr \, d\theta.
' "&chr(10)&"2. Compute:
' "&chr(10)&"\[ D = \int_0^{2\pi} \int_0^2 r^3 \, dr \, d\theta = \int_0^{2\pi} \left[\frac{r4}{4}\rig
ht]_02 d\theta = \int_0^{2\pi} 4 d\theta = 8\pi. \]
'


'
End Sub
Sub Macro55()
'
' Macro55 Macro
' 2. Incident Collision Scenarios
' "&chr(10)&"•?Projectile Motion and Trajectories: Use derivatives to determine speed and angles durin
g a collision or vehicle impact.
' "&chr(10)&"o Position as a function of time s(t)s(t):
' "&chr(10)&"
' "&chr(10)&"v(t)=dsdt,a(t)=dvdt.v(t) = \frac{ds}{dt}, \quad a(
'
```

```
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End Sub
Sub Macro56()
'
' Macro56 Macro
' Example: If s(t)=5t2+2ts(t) = 5t^2 + 2t, calculate velocity and acceleration:
' "&chr(10)&"1. Velocity:
' "&chr(10)&"
' "&chr(10)&"v(t)=dsdt=10t+2.v(t) = \frac{ds}{dt} = 10t + 2.
' "&chr(10)&"2. Acceleration:
' "&chr(10)&"
' "&chr(10)&"a(t)=dvdt=10 m/s2.a(t) = \frac{dv}{dt} = 10 \, \text{m/s}^2.
'

'
End Sub
Sub Macro57()
'
' Macro57 Macro
' 3. Patrol Research and Route Optimization
' "&chr(10)&"•?Travel Path Optimization Using Integrals: Minimize distance covered by patrol cars alon
g a curve y=f(x)y = f(x).
' "&chr(10)&"o Total patrol distance:
' "&chr(10)&"
' "&chr(10)&"L=?ab1+(dydx)2 dx.L = \int_a^b \sqrt{1 + \left(\frac{dy}{dx}\righ
'
    ActiveWindow.ActivePane.SmallScroll Down:=18
End Sub
Sub Macro58()
'
' Macro58 Macro
' Example: If y=x2y = x^2 and xx ranges from 0 to 1:
' "&chr(10)&"1. Compute dydx=2x\frac{dy}{dx} = 2x, so:
' "&chr(10)&"
' "&chr(10)&"L=?011+(2x)2 dx=?011+4x2 dx.L = \int_0^1 \sqrt{1 + (2x)^2} \, dx = \int_0^1 \sqrt{1 + 4x^
2} \, dx.
' "&chr(10)&"2. Approximate using numerical methods.
'

'
End Sub
Sub Macro59()
'
' Macro59 Macro
' Example: If y=x2y = x^2 and xx ranges from 0 to 1:
' "&chr(10)&"1. Compute dydx=2x\frac{dy}{dx} = 2x, so:
' "&chr(10)&"
' "&chr(10)&"L=?011+(2x)2 dx=?011+4x2 dx.L = \int_0^1 \sqrt{1 + (2x)^2} \, dx = \int_0^1 \sqrt{1 + 4x^
2} \, dx.
' "&chr(10)&"2. Approximate using numerical methods.
'

'
End Sub
Sub Macro60()
'
' Macro60 Macro
' Example: If y=x2y = x^2 and xx ranges from 0 to 1:
' "&chr(10)&"1. Compute dydx=2x\frac{dy}{dx} = 2x, so:
' "&chr(10)&"
' "&chr(10)&"L=?011+(2x)2 dx=?011+4x2 dx.L = \int_0^1 \sqrt{1 + (2x)^2} \, dx = \int_0^1 \sqrt{1 + 4x^
2} \, dx.
' "&chr(10)&"2. Approximate using numerical methods.
'

'
End Sub
Sub Macro61()
'
' Macro61 Macro
' 1. Compute:
' "&chr(10)&"\[ I = \int_0^3 10t^2 \, dt = \left[\frac{10t3}{3}\right]_03 = 90 \, \text{Ns}. \]
'
```

```
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'
    ActiveWindow.ActivePane.SmallScroll Down:=17
End Sub
Sub Macro62()
'
' Macro62 Macro
' 5. Investigation Principles
' "&chr(10)&"•?Decay of Evidence Using Exponential Models: Biological or chemical evidence decays over
 time, modeled by:
' "&chr(10)&"
' "&chr(10)&"C(t)=C0e-?t,C(t) = C_0 e^{-\lambda t},
' "&chr(10)&"where ?\lambda is the decay rate.
' "&chr(10)&"Example: For C0=100 ngC_0 = 100 \, \t
'
End Sub
Sub Macro63()
'
' Macro63 Macro
' 6. Firearm Ballistics
' "&chr(10)&"•?Trajectory Calculations: The path of a bullet can be calculated using physics and deriv
atives:
' "&chr(10)&"o Horizontal range:
' "&chr(10)&"
' "&chr(10)&"R=v02sin?2?g,R = \frac{v_0^2 \sin 2\theta}{g},
' "&chr(10)&"where v0v_0: initial velocity, ?\theta: angle, g=9.8 m/s2g =
'
    ActiveWindow.ActivePane.SmallScroll Down:=40
End Sub
Sub Macro64()
'
' Macro64 Macro
' Example: If v0=300 m/sv_0 = 300 \, \text{m/s} and ?=45°\theta = 45^\circ:
' "&chr(10)&"1. Range:
' "&chr(10)&"
' "&chr(10)&"R=3002sin?90°9.8=900009.89183.67 m.R = \frac{300^2 \sin 90^\circ}{9.8} = \frac{90000}{9.8
} \approx 9183.67 \, \text{m}.
'

'
    ActiveWindow.ActivePane.SmallScroll Down:=20
End Sub
Sub Macro65()
'
' Macro65 Macro
' Example: If v0=300 m/sv_0 = 300 \, \text{m/s} and ?=45°\theta = 45^\circ:
' "&chr(10)&"1. Range:
' "&chr(10)&"
' "&chr(10)&"R=3002sin?90°9.8=900009.89183.67 m.R = \frac{300^2 \sin 90^\circ}{9.8} = \frac{90000}{9.8
} \approx 9183.67 \, \text{m}.
'

'
    ActiveWindow.ActivePane.LargeScroll Down:=1
    ActiveWindow.ActivePane.VerticalPercentScrolled = 0
End Sub
```