50 VBA Custom Excel Formulas with Code & Usage

Basic Math (1–10)

```
'1. Square of number
Function SquareNum(n As Double) As Double
    SquareNum = n * n
End Function
Use: =SquareNum(5) → 25

'2. Cube of number
Function CubeNum(n As Double) As Double
    CubeNum = n ^ 3
End Function
Use: =CubeNum(3) → 27

'3. Factorial
Function Factorial(n As Integer) As Double
    If n = 0 Then
        Factorial = 1
    Else
        Factorial = n * Factorial(n - 1)
    End If
End Function
Use: =Factorial(5) → 120

'4. Power (x^y)
Function PowerNum(x As Double, y As Double) As Double
    PowerNum = x ^ y
End Function
Use: =PowerNum(2,4) → 16

'5. Average of 2 numbers
Function Avg2(a As Double, b As Double) As Double
    Avg2 = (a + b) / 2
End Function
Use: =Avg2(10,20) → 15

'6. Sum of two numbers
Function AddTwo(a As Double, b As Double) As Double
    AddTwo = a + b
End Function
Use: =AddTwo(10,5) → 15

'7. Difference
Function SubTwo(a As Double, b As Double) As Double
    SubTwo = a - b
End Function
Use: =SubTwo(10,5) → 5

'8. Product
Function MulTwo(a As Double, b As Double) As Double
    MulTwo = a * b
End Function
Use: =MulTwo(10,5) → 50

'9. Division
Function DivTwo(a As Double, b As Double) As Double
    If b <> 0 Then
        DivTwo = a / b
    Else
        DivTwo = 0
    End If
End Function
Use: =DivTwo(10,2) → 5

'10. Modulus
Function Modulus(a As Double, b As Double) As Double
    Modulus = a Mod b
End Function
Use: =Modulus(10,3) → 1
```

Finance & Business (11–20)

```
'11. Simple Interest
Function SimpleInterest(P As Double, R As Double, T As Double) As Double
    SimpleInterest = (P * R * T) / 100
End Function
Use: =SimpleInterest(10000,5,2) → 1000

'12. Compound Interest
Function CompoundInterest(P As Double, R As Double, T As Double, N As Double) As Double
    CompoundInterest = P * (1 + (R / (N * 100))) ^ (N * T) - P
End Function

'13. EMI Calculator
Function EMI(P As Double, R As Double, N As Double) As Double
    Dim rMonthly As Double
    rMonthly = R / 1200
    EMI = (P * rMonthly * (1 + rMonthly) ^ N) / ((1 + rMonthly) ^ N - 1)
End Function

'14. Add GST
Function AddGST(Amt As Double, Rate As Double) As Double
    AddGST = Amt + (Amt * Rate / 100)
End Function

'15. Discount
Function Discount(Price As Double, Rate As Double) As Double
    Discount = Price - (Price * Rate / 100)
End Function

'16. Profit
Function Profit(SP As Double, CP As Double) As Double
    Profit = SP - CP
End Function

'17. Loss
Function Loss(CP As Double, SP As Double) As Double
    Loss = CP - SP
End Function

'18. Net Salary
Function NetSalary(Basic As Double, HRA As Double, DA As Double, PF As Double) As Double
    NetSalary = Basic + HRA + DA - PF
End Function

'19. USD to INR
Function USD2INR(USD As Double, Rate As Double) As Double
    USD2INR = USD * Rate
End Function

'20. INR to USD
Function INR2USD(INR As Double, Rate As Double) As Double
    INR2USD = INR / Rate
End Function
```

Science & Conversions (21–30)

```
'21. Celsius to Fahrenheit
Function CtoF(C As Double) As Double
    CtoF = (C * 9 / 5) + 32
End Function

'22. Fahrenheit to Celsius
Function FtoC(F As Double) As Double
    FtoC = (F - 32) * 5 / 9
End Function

'23. Km to Miles
Function KmToMiles(Km As Double) As Double
    KmToMiles = Km * 0.621371
End Function

'24. Miles to Km
Function MilesToKm(Miles As Double) As Double
    MilesToKm = Miles / 0.621371
End Function

'25. Meters to Feet
Function MtoFeet(M As Double) As Double
    MtoFeet = M * 3.28084
End Function
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'26. Feet to Meters
Function FeetToM(Ft As Double) As Double
    FeetToM = Ft / 3.28084
End Function

'27. Hours to Minutes
Function HtoM(H As Double) As Double
    HtoM = H * 60
End Function

'28. Minutes to Seconds
Function MtoS(M As Double) As Double
    MtoS = M * 60
End Function

'29. Seconds to Hours
Function StoH(S As Double) As Double
    StoH = S / 3600
End Function

'30. Speed (Distance/Time)
Function Speed(D As Double, T As Double) As Double
    If T <> 0 Then
        Speed = D / T
    Else
        Speed = 0
    End If
End Function
```

Geometry & Measurements (31–40)

```
'31. Area of Circle
Function AreaCircle(r As Double) As Double
    AreaCircle = 3.14159 * r * r
End Function

'32. Circumference of Circle
Function CircumCircle(r As Double) As Double
    CircumCircle = 2 * 3.14159 * r
End Function

'33. Area of Rectangle
Function AreaRect(L As Double, W As Double) As Double
    AreaRect = L * W
End Function

'34. Perimeter of Rectangle
Function PeriRect(L As Double, W As Double) As Double
    PeriRect = 2 * (L + W)
End Function

'35. Area of Triangle
Function AreaTri(B As Double, H As Double) As Double
    AreaTri = 0.5 * B * H
End Function

'36. Area of Square
Function AreaSquare(S As Double) As Double
    AreaSquare = S * S
End Function

'37. Perimeter of Square
Function PeriSquare(S As Double) As Double
    PeriSquare = 4 * S
End Function

'38. Volume of Cube
Function VolCube(S As Double) As Double
    VolCube = S ^ 3
End Function

'39. Volume of Sphere
Function VolSphere(R As Double) As Double
    VolSphere = (4 / 3) * 3.14159 * R ^ 3
End Function

'40. Volume of Cylinder
Function VolCyl(R As Double, H As Double) As Double
    VolCyl = 3.14159 * R ^ 2 * H
End Function
```

Miscellaneous (41–50)

```
'41. BMI
Function BMI(W As Double, H As Double) As Double
    BMI = W / (H * H)
End Function

'42. Age Calculator
Function Age(DOB As Date) As Integer
    Age = Year(Date) - Year(DOB)
    If Date < DateSerial(Year(Date), Month(DOB), Day(DOB)) Then Age = Age - 1
End Function

'43. Leap Year Check
Function IsLeapYear(Y As Integer) As Boolean
    IsLeapYear = ((Y Mod 4 = 0 And Y Mod 100 <> 0) Or (Y Mod 400 = 0))
End Function

'44. Palindrome Check
Function IsPalindrome(txt As String) As Boolean
    Dim rev As String, i As Integer
    rev = ""
    For i = Len(txt) To 1 Step -1
        rev = rev & Mid(txt, i, 1)
    Next
    IsPalindrome = (LCase(txt) = LCase(rev))
End Function

'45. Reverse String
Function ReverseStr(txt As String) As String
    Dim i As Integer
    For i = Len(txt) To 1 Step -1
        ReverseStr = ReverseStr & Mid(txt, i, 1)
    Next
End Function

'46. Count Vowels
Function CountVowels(txt As String) As Integer
    Dim i As Integer, c As Integer
    txt = LCase(txt)
    For i = 1 To Len(txt)
        If InStr("aeiou", Mid(txt, i, 1)) > 0 Then c = c + 1
    Next
    CountVowels = c
End Function

'47. Word Count
Function WordCount(txt As String) As Integer
    WordCount = UBound(Split(Trim(txt), " ")) + 1
End Function

'48. Prime Check
Function IsPrime(n As Long) As Boolean
    Dim i As Long
    If n < 2 Then IsPrime = False: Exit Function
    For i = 2 To Sqr(n)
        If n Mod i = 0 Then IsPrime = False: Exit Function
    Next
    IsPrime = True
End Function

'49. Fibonacci n-th term
Function Fibonacci(n As Integer) As Long
    If n <= 1 Then
        Fibonacci = n
    Else
        Fibonacci = Fibonacci(n - 1) + Fibonacci(n - 2)
    End If
End Function

'50. GCD (HCF)
Function GCD(a As Long, b As Long) As Long
    Do While b <> 0
        Dim temp As Long
        temp = b
        b = a Mod b
        a = temp
    Loop
```

```
    GCD = a
End Function
```