**Problem:**

Copy the table of triangle side lengths into an Excel worksheet. Write a VBA Sub procedure which calculates the perimeter, *P*, for each triangle and writes it to the worksheet in a column to the right of the side lengths.

|  |  |  |
| --- | --- | --- |
| Triangle Side Lengths | | |
| A | B | C |
| 3 | 4 | 5 |
| 4 | 12 | 16 |
| 5 | 12 | 13 |
| 7 | 24 | 25 |
| 8 | 6 | 10 |
| 9 | 12 | 15 |
| 15 | 20 | 25 |
| 18 | 24 | 30 |
| 20 | 21 | 29 |
| 14 | 3 | 17 |

Your Sub procedure should also determine if each triangle in question is a right triangle or not and write either the text “Right Triangle” or “Not Right Triangle” in the column to the right of the perimeter values.

Copy the resulting table and your VBA code into your Word document.

***Question*:** How many of the triangles are right triangles?.

**Answer:** There are 8 right triangles out of 10 triangles total.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Triangle # | Triangle Side Lengths | | | Perimeter | Triangle |  |  |  |
| A | B | C | Right |  |  |  |
| 1 | 3 | 4 | 5 | 12 | YES | Number of Triangles | | |
| 2 | 4 | 12 | 16 | 32 | NO | 10 | | |
| 3 | 5 | 12 | 13 | 30 | YES | Number of Right Triangles | | |
| 4 | 7 | 24 | 25 | 56 | YES | 8 | | |
| 5 | 8 | 6 | 10 | 24 | YES |  |  |  |
| 6 | 9 | 12 | 15 | 36 | YES |  |  |  |
| 7 | 15 | 20 | 25 | 60 | YES |  |  |  |
| 8 | 18 | 24 | 30 | 72 | YES |  |  |  |
| 9 | 20 | 21 | 29 | 70 | YES |  |  |  |
| 10 | 14 | 3 | 17 | 34 | NO |  |  |  |

' Clair Cunningham PSWC-01 Week 6 Homework #6

Sub HW6WK6PB1()

' Homework Problem #1, Homework 6 Week 6

' Calculates the perimeter for each triangle

' Determines if the triangle is right triangle

'Initialize variables

Dim triangle() As Double, count As Integer, righttri() As String, perim() As Double, numright As Integer

'Select Starting Cell

Range("B12").Select

count = 0

' Counts the number of triangles and outputs the number

Do While ActiveCell.Value <> 0

count = count + 1

ActiveCell.Offset(0, -1).Value = count

ActiveCell.Offset(1, 0).Select

Loop

' Redimensions the arrays to the correct size

ReDim triangle(count, 3)

ReDim righttri(count)

ReDim perim(count)

' Reselects starting cell

Range("B12").Select

' Loop to set the values of the arrays and check for right triangles

For i = 1 To count

For s = 1 To 3

triangle(i, s) = ActiveCell.Offset(i - 1, s - 1).Value

Next s

sqrab = triangle(i, 1) ^ 2 + triangle(i, 2) ^ 2

sqrc = triangle(i, 3) ^ 2

perim(i) = triangle(i, 1) + triangle(i, 2) + triangle(i, 3)

If sqrab = sqrc Then

righttri(i) = "YES"

numright = numright + 1

Else

righttri(i) = "NO"

End If

Next i

'Outputs the values using a loop

' Selects the starting output cell

Range("E12").Select

For i = 1 To count

ActiveCell.Offset(i - 1, 0).Value = perim(i)

ActiveCell.Offset(i - 1, 1).Value = righttri(i)

Next i

Range("G15").Value = numright

Range("G13").Value = count

End Sub