1. Calculate the total number of each kind of tree ordered in row 22. Note that you can copy the formula for the first column, *Apple* trees, across in the same way you copy formulas down.

**D22=SUM(D15:D21)**

1. Calculate the *Subtotal Amount* for each order in column L, using references to the tree prices table in cells A4 to B10. Remember to use absolute references (with $ sign) for fixed position cells. You should be able to copy the formula for the first order down to cover subsequent orders.

**L15=D15\*$B$5+E15\*$B$10+F15\*$B$6+G15\*$B$7+H15\*$B$8+I15\*$B$4+J15\*$B$9**

1. Use an *If* function to determine the *Discount Amount* values in column M. Orders that have a subtotal of at least the *Discount Minimum* (cell N8) receive a discount of *Discount Rate* percent (cell N7) of the subtotal.

**M15=IF(L15>=$N$8,$N$7\*L15,0)**

1. Compute the *Pre-Tax Total* for each order in column N from the *Subtotal Amount* and *Discount Amount*.

**N15=L15-M15**

1. Use the tax rate in cell N3 to compute the *Sales Tax* of each customer's order in column O.

**O15= N15\*$N$3**

1. Compute the *Total Amt* for each order in column P from the *Pre-Tax Total* and the *Sales Tax*.

**P15=N15+O15**

Compute the *Grand Total* of the total amounts in cell P22. **P22 =SUM(P15:P21)**

1. Use the *Max* function to find and display the largest total value for an order in cell N5.

**N5 =MAX(P15:P21)**

1. Calculate and display the percentage of the grand total paid by each customer (to one decimal place) in cells R15 to R21 formatted as percentage. Again, remember to use $ in cell references for values in fixed cells.

**R15 =P15/$P$22**

1. Format all dollar amounts to *Accounting* or *Currency*. (Try both to see how they differ; choose whichever you prefer).
2. Create a pie chart on a separate worksheet showing the corresponding percentage for each piece of the pie and the names of the customers as labels.
3. What happens if you change the order of the tree columns in the "*Tree Orders*" table in cells D14 to J14? For example, switch columns *Maple* and *Oak* by copying the *Maple* column cells (G14 to G21) somewhere empty on the sheet, copying the *Oak* column cells H14 to H21 to G14 to G21 and the *Maple* column cells back to cells H14-H21. Did values elsewhere in the sheet change? Obviously, things are not correct anymore because Excel is mixing up the prices for *Maple* and *Oak* (please verify this claim).

Redo step 2 to fix this by using a *VLookup* to find the price for a tree type given its name in cells D14 to J14 from the table (A4 to B10). Did this fix the issue? Switch back the order of columns *Maple* and *Oak* and verify that *Subtotal* values in column L DO NOT change.

**=D15\*VLOOKUP($D$14,$A$4:$B$10,2)+E15\*VLOOKUP($E$14,$A$4:$B$10,2)+F15\*VLOOKUP($F$14,$A$4:$B$10,2)+G15\*VLOOKUP($G$14,$A$4:$B$10,2)+H15\*VLOOKUP($H$14,$A$4:$B$10,2)+I15\*VLOOKUP($I$14,$A$4:$B$10,2)+J15\*VLOOKUP($J$14,$A$4:$B$10,2)**

Save and close spreadsheet *Exercise1\_Landscaping*.

