

## **SAMPLE HOME SQUARE FOOTAGE AND OTHER CALCULATIONS**

### **Using AS-EASY-AS for Windows 95/NT**

This example demonstrates the use of a number of built-in functions to calculate the total square footage for a house, and other interesting numbers related to the footage. You may modify the sample worksheet files accompanying this document to meet your needs and tastes.

#### **HOUSE DESCRIPTION**

The house in this example is made up of two floors, each floor having the rooms described below:

	<i><b>Dimensions</b></i>
<i><b>1st Floor</b></i>	<i><b>(LengthxWidth)</b></i>
Living room	15x16 ft
Kitchen	14x15.5 ft
Dining room	12x14.75 ft
Family room	18x16.25 ft
Foyer	10.5x8.5 ft
Bathroom	6x8 ft
Corridor	4.5x24 ft
<i><b>2nd Floor</b></i>	<i><b>Dimensions</b></i>
Master bedroom	14x14.5 ft
Second bedroom	11.5x14 ft
Third bedroom	11x12.25 ft
Bathroom	6.5x10 ft
Corridor	4.5x22 ft

#### **SQUARE FOOTAGE**

First, let's enter the information in AS-EASY-AS, using column A for the floor description, column B for the room description, column C for the Length and column D for the width of the room. First, though, let's enter the column descriptions. We do that by placing the cursor in cell A1, typing "Floor" (without the quotes) and pressing ENTER. Moving the cursor to cell B1, typing "Room" and pressing ENTER, moving the cursor to C1 typing "Length" and pressing ENTER, and the moving the cursor to cell D1 typing "Width" and pressing ENTER.

Now, we can enter the room information, as follows. Move the cursor to cell A2, type "First" and press ENTER. Move the cursor to cell B2, type "Living room" and press ENTER. Move the cursor to cell C2, type "15" and press ENTER. Move the cursor to cell D2, type "16" and press ENTER.

At this point, we move to row 3 and enter the information for the kitchen, then to row 4 and enter the information for the dining room, and so on until we finish entering the information of all the rooms. This is what the starting worksheet would look like:

	A	B	C	D
1	<b>Floor</b>	<b>Room</b>	<b>Length</b>	<b>Width</b>
2	First	Living room	15.00	16.00
3	First	Kitchen	14.00	15.50
4	First	Dining room	12.00	14.75
5	First	Family room	18.00	16.25
6	First	Foyer	10.50	8.50
7	First	Bathroom	6.00	8.00
8	First	Corridor	4.50	24.00
9				
10	Second	Master bedroom	14.00	14.50
11	Second	Second bedroom	11.50	14.00
12	Second	Third bedroom	11.00	12.25
13	Second	Bathroom	6.50	10.00

14 Second Corridor 4.50 22.00

At this point, we can have the program calculate the square footage for each room, by using a simple multiplication formula. For example, place the cursor in cell E2, type +C2\*D2 and press ENTER. The value of 240 should appear. Now, we can use the powerful copy command to copy the formula, rather than having to re-type it for each room of interest.

Place the cursor in cell E2, select copy from the main menu, click on the checkmark to confirm the "From" selection, then place the cursor in cell E3, press the left mouse button and while keeping it down drag the cursor to cell E8. Release the left mouse button, then click on the checkmark to confirm the selection. Now, repeat the process using range E10 to E14 as the "Copy To" range. Finally, move the cursor to cell E1 type Area and type ENTER. The new screen should look as shown below.

	A	B	C	D	E
1	<b>Floor</b>	<b>Room</b>	<b>Length</b>	<b>Width</b>	<b>Area</b>
2	First	Living room	15.00	16.00	240.00
3	First	Kitchen	14.00	15.50	217.00
4	First	Dining room	12.00	14.75	177.00
5	First	Family room	18.00	16.25	292.50
6	First	Foyer	10.50	8.50	89.25
7	First	Bathroom	6.00	8.00	48.00
8	First	Corridor	4.50	24.00	108.00
9					
10	Second	Master bedroom	14.00	14.50	203.00
11	Second	Second bedroom	11.50	14.00	161.00
12	Second	Third bedroom	11.00	12.25	134.75
13	Second	Bathroom	6.50	10.00	65.00
14	Second	Corridor	4.50	22.00	99.00

At this point, we can calculate the total square footage for the first and second floor using the AS-EASY-AS @SUM function. Move the cursor to cell E9, type @SUM(E2..E8) and press ENTER. Then, move the cursor to cell E15, type @SUM(E10..E14) and press ENTER. Finally, move the cursor to E16, type +E9+E15 and press ENTER to calculate the total square footage. The first, second floor and total total square footages are shown in the worksheet below:

	A	B	C	D	E
1	<b>Floor</b>	<b>Room</b>	<b>Length</b>	<b>Width</b>	<b>Area</b>
2	First	Living room	15.00	16.00	240.00
3	First	Kitchen	14.00	15.50	217.00
4	First	Dining room	12.00	14.75	177.00
5	First	Family room	18.00	16.25	292.50
6	First	Foyer	10.50	8.50	89.25
7	First	Bathroom	6.00	8.00	48.00
8	First	Corridor	4.50	24.00	108.00
9					1171.75
10	Second	Master bedroom	14.00	14.50	203.00
11	Second	Second bedroom	11.50	14.00	161.00
12	Second	Third bedroom	11.00	12.25	134.75
13	Second	Bathroom	6.50	10.00	65.00
14	Second	Corridor	4.50	22.00	99.00
15					662.75
16					1834.50

### COST OF FLOOR COVERING

Now, let's assume that we are going to cover the floors in the house with one of three materials, carpet, tile or hardwood, and we want to calculate the cost for doing so. We'll use column F to enter the type of floor cover for each room, as shown below

	A	B	C	D	E	F
1	<b>Floor</b>	<b>Room</b>	<b>Length</b>	<b>Width</b>	<b>Area</b>	<b>Material</b>
2	First	Living room	15.00	16.00	240.00	carpet
3	First	Kitchen	14.00	15.50	217.00	tile
4	First	Dining room	12.00	14.75	177.00	hardwood
5	First	Family room	18.00	16.25	292.50	carpet

6	First Foyer	10.50	8.50	89.25 tile
7	First Bathroom	6.00	8.00	48.00 tile
8	First Corridor	4.50	24.00	108.00 carpet
9				1171.75
10	Second Master bedroom	14.00	14.50	203.00 carpet
11	Second Second bedroom	11.50	14.00	161.00 carpet
12	Second Third bedroom	11.00	12.25	134.75 carpet
13	Second Bathroom	6.50	10.00	65.00 tile
14	Second Corridor	4.50	22.00	99.00 carpet
15				662.75
16				1834.50

Finally, we'll make the assumption that carpeting is \$15 a square yard, tile is \$5 a square foot and hardwood is \$9 a square foot. We'll use column G to calculate the cost. Rather than typing individual formulas, we'll develop a single @IF formula to calculate the cost based on the individual entries in column F. Let's place the cursor in cell G2 and type the following formula:

`=IF(F2="carpet",(E2/9*15),IF(F2="tile",E2*5,IF(F2="hardwood",E2*9,0)))`

Press ENTER to complete the formula. This formula simply checks the contents of cell F2 and,

(a) if it is equal to "carpet", it divides the area (cell E2) by 9 to convert it from square feet to square yards, and then multiplies the result by 15 (cost of carpet per square yard). If the contents in F2 are NOT equal to "carpet", then

(b) if it is equal to "tile", it multiplies the area (cell E2) by 5 (cost of tile per square foot). If the contents in F2 are NOT equal to "tile", then

(c) if it is equal to "hardwood", it multiplies the area (cell E2) by 9 (cost of hardwood per square foot). If the contents in F2 are NOT equal to "hardwood", then it sets the value of F2 to zero.

Since cell F2 contains "carpet", the area (240) was divided by 9 and then multiplied by 15 and the result was entered in cell G2.

Now let us copy the formula to the rest of the cells, as follows:

Place the cursor in cell G2, select copy from the main menu, click on the checkmark to confirm the "From" selection, then place the cursor in cell G3, press the left mouse button and while keeping it down drag the cursor to cell G8. Release the left mouse button, then click on the checkmark to confirm the selection. Now, repeat the process using range G10 to G14 as the "Copy To" range. Finally, move the cursor to cell G1 type "Cost" and type ENTER. The new screen should look as shown below.

The results are shown below:

	A	B	C	D	E	F	G
1	<b>Floor</b>	<b>Room</b>	<b>Length</b>	<b>Width</b>	<b>Area</b>	<b>Material</b>	<b>Cost</b>
2	First	Living room	15.00	16.00	240.00	carpet	400.00
3	First	Kitchen	14.00	15.50	217.00	tile	1085.00
4	First	Dining room	12.00	14.75	177.00	hardwood	1593.00
5	First	Family room	18.00	16.25	292.50	carpet	487.50
6	First	Foyer	10.50	8.50	89.25	tile	446.25
7	First	Bathroom	6.00	8.00	48.00	tile	240.00
8	First	Corridor	4.50	24.00	108.00	carpet	180.00
9							1171.75
10	Second	Master bedroom	14.00	14.50	203.00	carpet	338.33
11	Second	Second bedroom	11.50	14.00	161.00	carpet	268.33
12	Second	Third bedroom	11.00	12.25	134.75	carpet	224.58
13	Second	Bathroom	6.50	10.00	65.00	tile	325.00
14	Second	Corridor	4.50	22.00	99.00	carpet	165.00
15							662.75
16							1834.50

Now, we can calculate the total cost for the first and second floor using the AS-EASY-AS @SUM function. Move the cursor to cell G9, type @SUM(G2..G8) and press ENTER. Then, move the cursor to cell G15, type @SUM(G10..G14) and press ENTER. Finally, move the cursor to G16, type +G9+G15 and press ENTER to calculate the total for both the first and second floor. The first, second floor and total floor covering costs are shown in the worksheet below:

	A	B	C	D	E	F	G
1	<b>Floor</b>	<b>Room</b>	<b>Length</b>	<b>Width</b>	<b>Area</b>	<b>Material</b>	<b>Cost</b>
2	First	Living room	15.00	16.00	240.00	carpet	400.00
3	First	Kitchen	14.00	15.50	217.00	tile	1085.00
4	First	Dining room	12.00	14.75	177.00	hardwood	1593.00
5	First	Family room	18.00	16.25	292.50	carpet	487.50
6	First	Foyer	10.50	8.50	89.25	tile	446.25
7	First	Bathroom	6.00	8.00	48.00	tile	240.00
8	First	Corridor	4.50	24.00	108.00	carpet	180.00
9					1171.75		4431.75
10	Second	Master bedroom	14.00	14.50	203.00	carpet	338.33
11	Second	Second bedroom	11.50	14.00	161.00	carpet	268.33
12	Second	Third bedroom	11.00	12.25	134.75	carpet	224.58
13	Second	Bathroom	6.50	10.00	65.00	tile	325.00
14	Second	Corridor	4.50	22.00	99.00	carpet	165.00
15					662.75		1321.25
16					1834.50		5753.00

Now that we have completed the model, we can really start investigating the "what-if" capabilities of AS-EASY-AS. Suppose, for example, that we decide we do not want to cover the dining room with hardwood, but want to use tile, instead. Simply move the cursor to cell F4, type tile and press ENTER. You immediately see the calculated cost in G4 display 885.00 and the totals in cells G9, and G16 reflect the new corrected sums of 3723.75 and 5045.00 respectively. Now, let's say we want to use hardwood in the upstairs corridor. Once again, simply move the cursor to cell F14, type "hardwood" and press ENTER. Automatically, the value in cell G14 changes to 585.00 and the totals in cells G15 and G16 change to 1581.25 and 5305.00 respectively.

You may now continue to investigate the "what-if" capabilities of AS-EASY-AS on your own.