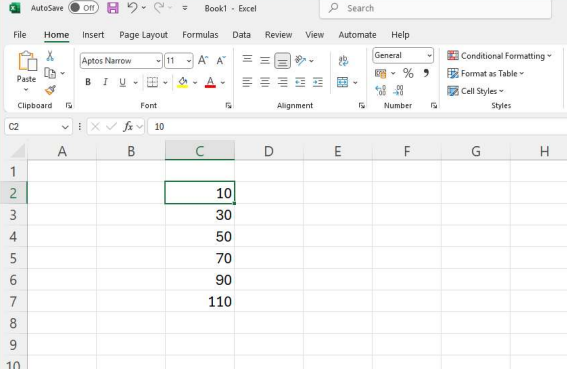
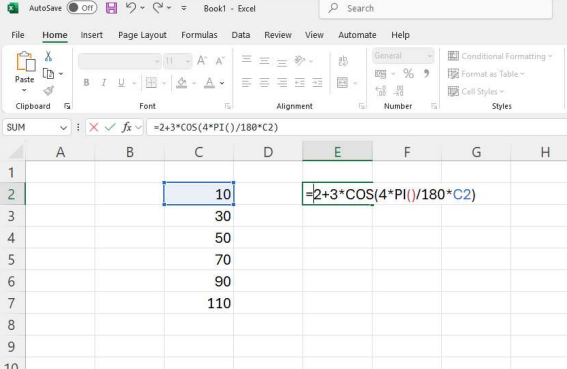
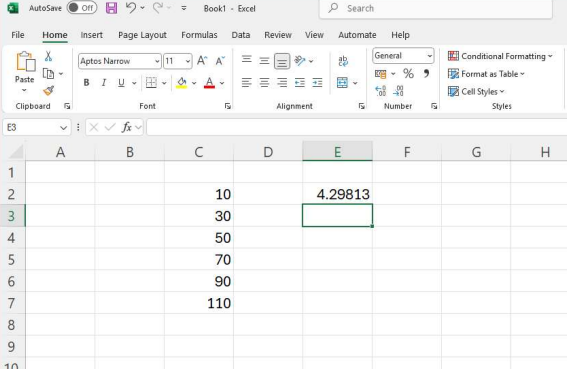
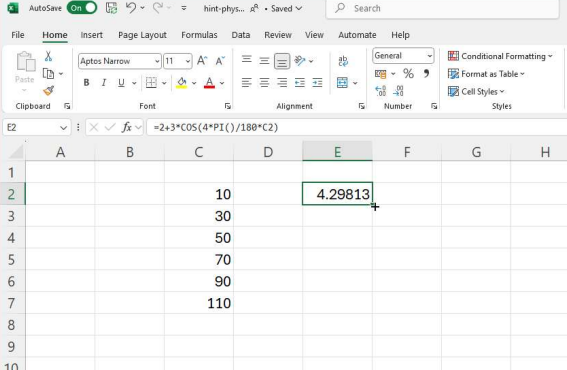
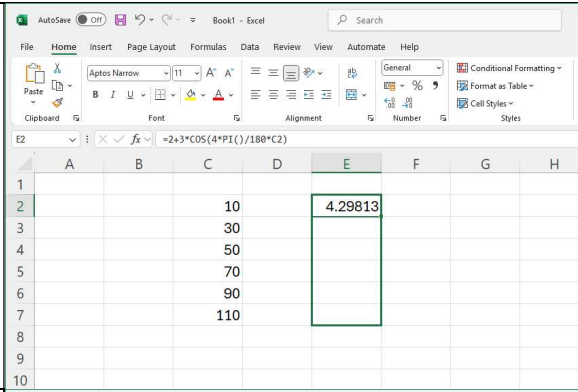


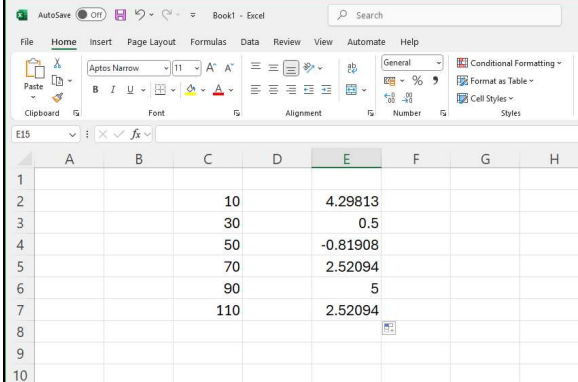
Example 1: Given angles in degree in a row 'C', let's calculate the values of the function $f(x) = 2 + 3 \cos 4x$ in row 'E', where 'x' represents the angles in row 'C' :

Step #		
1.	Fill cells 'C2' to 'C7' in column 'C' with angle values in degree.	
2.	Go to (or click) cell 'E2' and start writing formula. Note that the first character is '=' (equal sign). Also, note that inside 'COS' function we perform conversion from degrees to radians, as 'COS' accepts radians as arguments.	
3.	Press 'Enter', and the first cell – 'E2' – will be filed with calculated value.	
4.	Select calculated cell, release mouse button and move mouse pointer to the bottom left corner of the cell. (Note that the cursor shape has changed to cross '+'.) Press and hold left mouse button.	

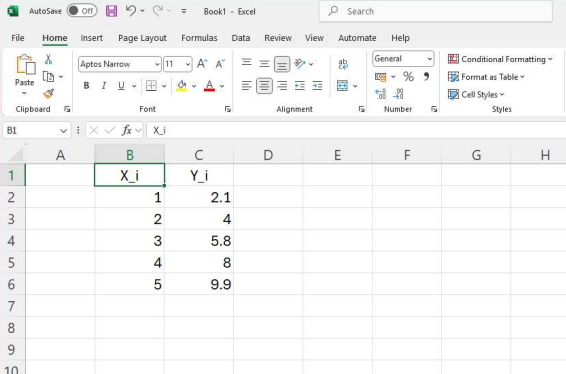
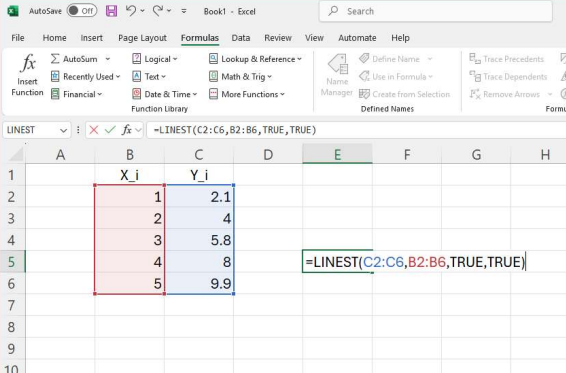
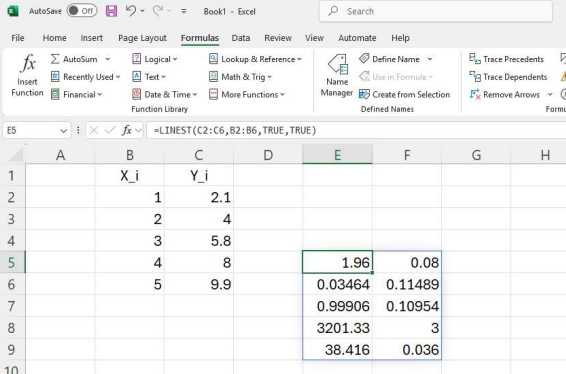
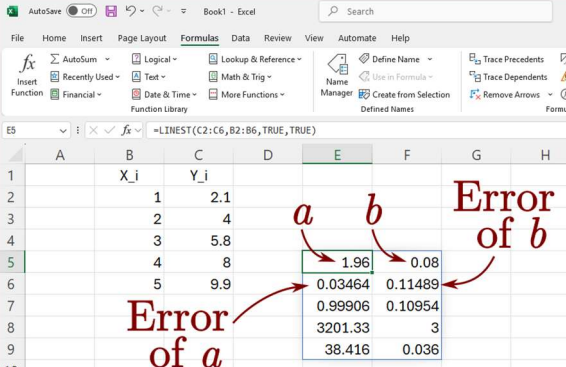
5. While holding left mouse button, move mouse downward, to the cell 'E7'.



6. Release mouse button. Every cell in column 'E' will be updated with the expression entered in step 2 but calculated with appropriate argument from column 'C'. For example, cell 'E6' will use value from cell 'C6'.



Example 2: Let's find the best linear function (the best fit) $y(x) = ax + b$, i.e. slope a and intercept b , which will best fit (measured or calculated) set of points (X_i, Y_i) .

Step #																				
1.	Populate rows with points (X_i, Y_i) . We put points in adjacent rows 'B' and 'C', and from rows '2' to '6'. In cells 'B1' and 'C1' we put description of the columns, for our convenience; it is not required.	 <p>The screenshot shows an Excel spreadsheet with columns B and C containing data points. Row 1 has headers 'X_i' and 'Y_i'. Rows 2-6 contain the following data:</p> <table border="1"> <thead> <tr> <th>X_i</th> <th>Y_i</th> </tr> </thead> <tbody> <tr><td>1</td><td>2.1</td></tr> <tr><td>2</td><td>4</td></tr> <tr><td>3</td><td>5.8</td></tr> <tr><td>4</td><td>8</td></tr> <tr><td>5</td><td>9.9</td></tr> </tbody> </table>	X _i	Y _i	1	2.1	2	4	3	5.8	4	8	5	9.9						
X _i	Y _i																			
1	2.1																			
2	4																			
3	5.8																			
4	8																			
5	9.9																			
2.	To find slope a and intercept b , we enter formula in arbitrary cell, here it is 'E5'. The formula is: =LINEST(y-range, x-range, TRUE, TRUE) The last two 'TRUE' tells formula to calculate intercept b and to calculate errors of both slope a and intercept b .	 <p>The screenshot shows the Excel spreadsheet with the formula =LINEST(C2:C6,B2:B6,TRUE,TRUE) entered in cell E5. The formula bar at the top displays the formula.</p>																		
3.	Press 'Enter' (evaluate formula), and result will be stored in two columns.	 <p>The screenshot shows the Excel spreadsheet with the results of the LINEST formula. The results are displayed in columns E and F, rows 5-9:</p> <table border="1"> <thead> <tr> <th>Row</th> <th>Column E</th> <th>Column F</th> </tr> </thead> <tbody> <tr><td>5</td><td>1.96</td><td>0.08</td></tr> <tr><td>6</td><td>0.03464</td><td>0.11489</td></tr> <tr><td>7</td><td>0.99906</td><td>0.10954</td></tr> <tr><td>8</td><td>3201.33</td><td>3</td></tr> <tr><td>9</td><td>38.416</td><td>0.036</td></tr> </tbody> </table>	Row	Column E	Column F	5	1.96	0.08	6	0.03464	0.11489	7	0.99906	0.10954	8	3201.33	3	9	38.416	0.036
Row	Column E	Column F																		
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6	0.03464	0.11489																		
7	0.99906	0.10954																		
8	3201.33	3																		
9	38.416	0.036																		
4.	Values of slope a and intercept b are in first row, and corresponding (standard) errors are in second row. In our example: $a = (1.960 \pm 0.035)$ and $b = (0.08 \pm 0.11)$	 <p>The screenshot shows the Excel spreadsheet with annotations. Red arrows point from the text 'Error of a' to the value 1.96 in cell E5 and 0.03464 in cell F6. Another red arrow points from the text 'Error of b' to the value 0.08 in cell F5 and 0.11489 in cell F6. The text 'a' and 'b' are also written above the values in E5 and F5 respectively.</p>																		