

CS130 Midterm Review

Create a workbook called **PUNetIDMidtermReview**

DO NOT drop this workbook into the CS130 Drop folder!!! ☺

1) (Medium) Is it possible to rewrite the following IF function without using any ANDs or ORs? =IF(AND(A1>5,B1>10,C1,D1) If it is possible, then you have two IF statements that are logically equivalent. If it is possible, what test data do you need to run through both IF functions to make sure they do exactly the same thing (i.e. they are logically equivalent)?

2) (Easy) The first few fibonacci numbers are: 1,1,2,3,5,8,... where the first two numbers are always 1,1 and each subsequent number is found by adding the previous two. In one column, I would like you to find the first 12 fibonacci numbers. In another column, I would like you to find the first 12 solutions to the equation: $y=x^2$ over the interval $1 \leq x \leq 12$ where x is an integer. You can use as many columns of data as you need.

(Hard): You can only use two columns of data to solve the first part of this problem.

3) (Medium) An approximation for $\frac{\pi}{4}$ is $1/1 - 1/3 + 1/5 - 1/7 + 1/9 - \dots$
Design a worksheet that displays the approximation for $\frac{\pi}{4}$ using the first 20 terms of the sequence.

4) (Hard) The harmonic mean of a set of numbers is the number of scores N, divided by the reciprocals of each number. As an example, the harmonic mean of 7,8,7,3,6,2 is:

$$6 / (1/7 + 1/8 + 1/7 + 1/3 + 1/6 + 1/2) = 4.3$$

Design an Excel worksheet that allows the user the ability to enter up to 10 numbers and prints the harmonic mean of the numbers entered. Note: The user can enter from 1 to 10 different numbers inclusively.

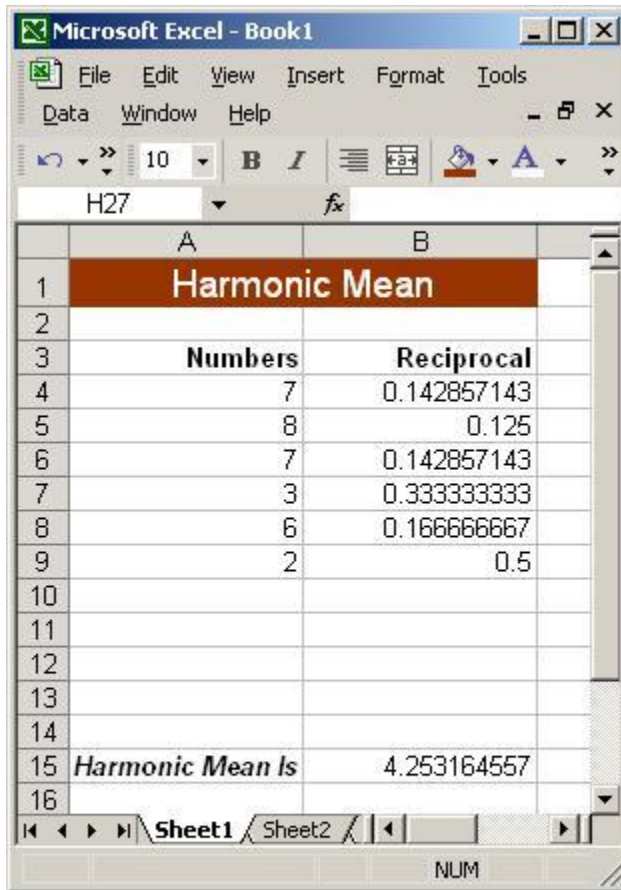
Here is an example:

Harmonic Mean = 4.253165

Numbers	Reciprocal
7	0.142857143

8	0.125
7	0.142857143
3	0.333333333
6	0.166666667
2	0.5

Make your worksheet look like the following:



If a value is typed into A10, the reciprocal is calculated in B10 without any dragging down being necessary. Again, set the worksheet up to handle up to 10 numbers.