

Worksheet 1

Math 206

Wednesday, September 27, 2023

Write down your group members' names, and their email addresses in case you want to continue the discussion outside of class. What year are they? What other courses are they taking this term?

Begin by finding the following sums:

$$1, \quad 1 + 2, \quad 1 + 2 + 3, \quad 1 + 2 + 3 + 4,$$

and so on, up to

$$1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10.$$

Does anyone in your group know a general formula for

$$1 + 2 + 3 + \cdots + n?$$

Think of as many explanations or proofs for this formula as you can – at least three different ways of thinking about it, hopefully more.

Once you've discussed that very thoroughly, do the same with

$$1^2 + 2^2 + 3^2 + \cdots + n^2.$$