

## Fall 2016 COT 3100 Homework #4 Grading Criteria

Three questions to grade carefully:

Question #11 (0 if not there, 1 if structure of induction is intact, 2 if mostly correct)

Question #12 (0 if not there, 1 if structure of induction is intact, 2 if mostly correct)

Question #15 (0 if not there, 1 if structure of induction is intact, 2 if mostly correct)

Items to comment upon for each question:

Q11: Comment on properly writing out the I.H. and I.S. - it's very important to clearly state what is assumed and what is proved. Take off 1 point if they just say, "assume the statement for  $k$ " and "prove the statement for  $k+1$ ". It's critical that we see them actually plug in  $k$  and  $k+1$  into the statement. Comment on any incorrect algebra as well as any sum indexes off by 1. Also, make sure students do NOT work on both sides of an equation. They should start with one quantity and get to the other. (You can only work on both sides if you start with the IH which is assumed to be true...) Also, students should explain at which step they used the IH.

Q12: Same comment about IH and IS, don't take the point off on this one if you did for #11 for not being clear on that. Comment if students don't properly plug into the definition of a harmonic number in different instances. Also, students should explain at which step they used the IH.

Q15: Same as before, just carefully comment on the  $<$  steps in the proof as necessary, in addition to all the stuff above.

Questions 1-10, 13 and 14 - very quickly eyeball and award 0, 1, 2, 3 or 4 points out of 4. As long as these look roughly complete please just give 4/4. Only give a lower score if there are very clear deficiencies that you can gauge by glancing at their responses for 15 seconds or fewer.