

Math 202-08

Quiz 3

Name:.....ID.....

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Exercise: Find the singular points of the DE

$$(x + 1)^2 xy'' + xy' + y = 0$$

- a) Determine whether they are regular or irregular and find the indicial equation corresponding to the regular singular point if any as well as the indicial roots.
- b) Give the form (only) of two linearly independent solutions.
- c) Find the first four terms of the series solution about the regular singular point, satisfying  $y(0) = 0$  and  $y'(0) = 1$ .