

MTH 302: Skill Quiz 13

This quiz contains the **third appearance** of Skill DE.5.

Instructions:

- If you had a "Success" mark on a skill from the first quiz, **do not do the problem for that skill again**. You only need one "Success" on each skill, then you're done.
- You should only be working on the skills that you **need** to work on (because you've never tried them, or you did and got "Retry") *and* you feel **ready** to work on.
- Make sure to consult the [Standards for Student Work in MTH 302](#) document before starting on your work, so you're clear on what is expected and what constitutes a "successful" attempt. Also check the *Success criteria* below each problem.

Foundational Skill DE.5

DE.5: I can solve a linear, homogeneous second-order differential equation.

Consider the differential equation:

$$y'' + 4y' - 12y = 0$$

- (a) State the characteristic equation.
- (b) Solve the characteristic equation and *show your work*.
- (c) State the general solution to the differential equation.

Success criteria: The characteristic equation is correctly stated. The characteristic equation is solved correctly and the solutions clearly indicated, and all appropriate work is shown. The general solution to the DE is correctly stated and *is not merely the results of (b)*. One "simple" error is allowed but all work that follows from the error must be consistent with the error.