

Is is Linear?

Quiz: Is it Linear?

We will develop a theory of linear equations, complete with an algorithm for solving them. It's important to recognize them when you see them.

Which of the following are linear ODE's?

1. $\dot{x} + x^2 = t$
2. $\dot{x} = (t^2 + 1)(x - 1)$
3. $\dot{x} + x = t^2$

Choices:

- a) None
- b) (1) only
- c) (2) only
- d) (3) only
- e) All
- f) All but (1)
- g) All but (2)
- h) All but (3)

Answer:

Equations (2) and (3) are linear; (1) is not: the correct answer is (f).

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