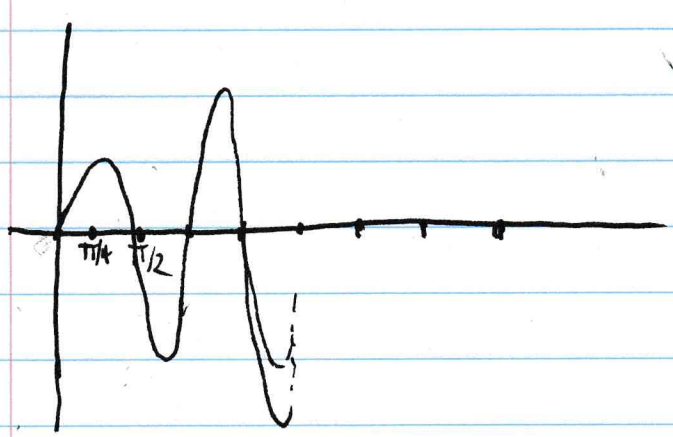
Unit 2 Lesson 7

- For specific inputs to a mass-damper system, we can observe <u>resonance</u>; consider the undamped system

$$\ddot{x} + 4x = 2\cos(2t);$$

complex replacement and using the general solution gets us

$$x_p = \frac{1}{2} t \sin(2t), \text{ whereve see}$$



ish

- Point is, we get fast growth due to the leadlogt.

Example Problem

By complex replacement we get

$$\ddot{z} + \dot{z} = 2e^{it}$$

and in turn

$$\text{real}(z_p) = x_p = -t\cos(t).$$