

Sec 7.1 Modeling With Differential Equations

Bonus question for your quiz. Consider the DE

~~$\frac{dx}{dt} = x^2 + a$~~ For what values of (a) are there equilibrium solutions?

$$0 = x^2 + a$$

$$\boxed{x^2 = -a}$$

Equl's when $a \leq 0$

No eq when $a > 0$

$$\frac{dx}{dt} = \boxed{x^2 + a}$$

$$a = -2$$

$$x^2 = -(-2)$$

$$x^2 = 2$$

$$x = \pm\sqrt{2}$$

~~$$x^2 = -2$$~~

