

Quiz 3 MATH 3503 Spring 2019

Solve the IVP  $\begin{cases} x' = 2t \\ x(0) = 5 \end{cases}$

Solution: integrate  $x' = 2t$  to get

$$x = \int 2t dt$$

$$x = t^2 + C$$

Apply initial condition:

$$\underbrace{5}_{\text{given}} = x(0) = \underbrace{0^2 + C}_{\text{calculated}}$$

Hence  $C = 5$  and we have  $x(t) = t^2 + 5$ .