Chapter 6: Polynomial Functions
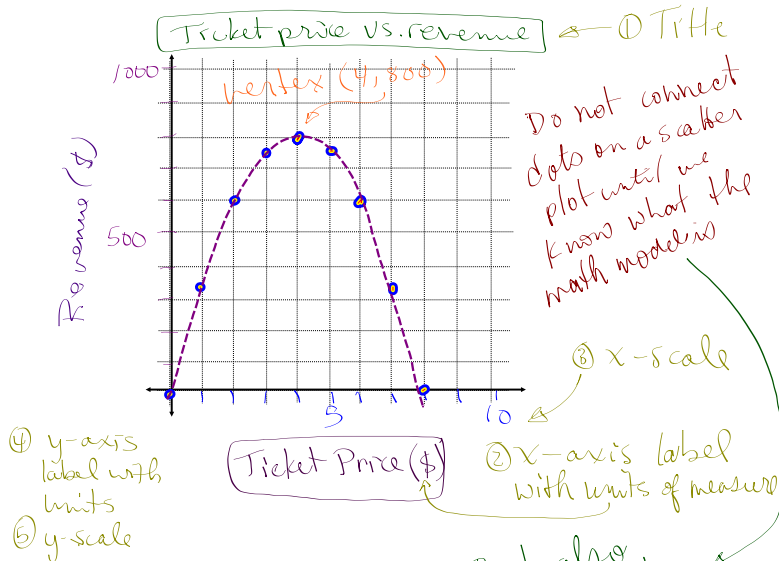
6.0 Getting Started $\Rightarrow$ discuss various models for long-term global population

scatter plot: A set of points on a grid, used to visualize a relationship or trend in the data

polynomial function: a function that contains only operations of multiplication or addition with real-number exponents, and two variables

ex. $f(x) = x^3 - 3x^2 + x - 7$ ← natural number

$y \rightarrow$

Getting Started Pg. 378:

Ticket price vs. revenue ← ① Title

vertex $(4, 800)$

Do not connect dots on a scatter plot until we know what the math model is

③ x-scale

④ y-axis label with units
⑤ y-scale

Ticket Price ($) ② x-axis label with units of measure

But also, we cannot draw solid lines for discrete data... only continuous data

Homework: pg. 303 #1-4

can be infinitely subdivided
ex// mass, time, distance, ...

can't be divided
ex// # of cars sold

quadratic: $y = a(x-h)^2 + k$ (vertex) $\rightarrow (h, k)$

$y = ax^2 + bx + c$ (general)

B) $y = a(x-4)^2 + 800$

vertical stretch factor

let's use the known point $(0, 0)$ to solve for the "a" value.

$0 = a(0-4)^2 + 800$

$0 = 16a + 800$

$\dfrac{-800}{16} = \dfrac{16a}{16} \Rightarrow \boxed{a = -50}$

$R(t) = -50(x-4)^2 + 800$

↑ revenue as a function of ticket price