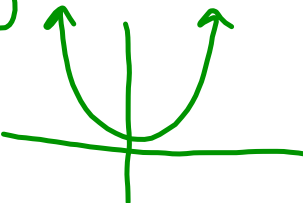
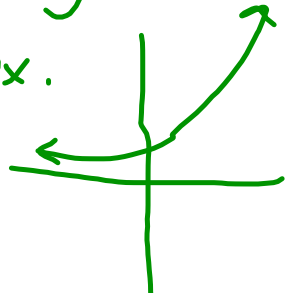


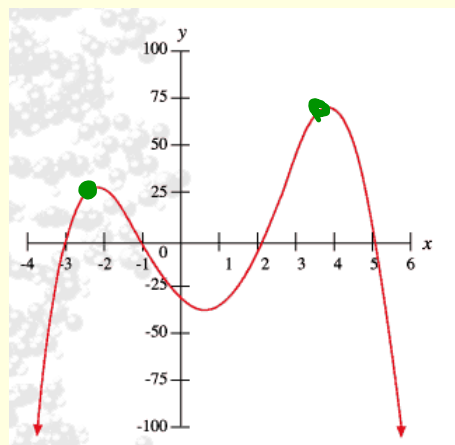
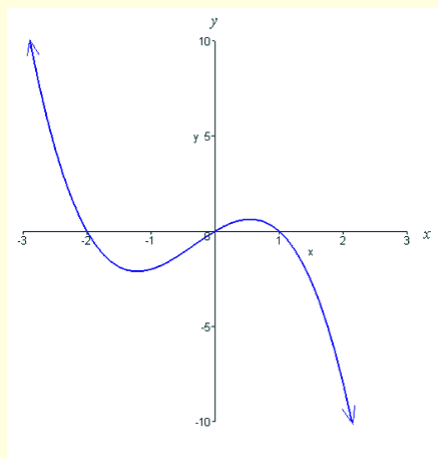
Ch.4b Exponential and Rational Models

Mathematical Models

Linear Model	Quadratic Model	Exponential Model
$y = mx + b$ <ul style="list-style-type: none"> • slope • y-int <p>D: $x \in \mathbb{R}$ R: $y \in \mathbb{R}$</p>	$y = ax^2 + bx + c$  <ul style="list-style-type: none"> • vertex: min / max • y-int. • x-int. D: $x \in \mathbb{R}$ 	$y = a^x + c$ <p>ex. </p> <p>D: $x \in \mathbb{R}$ y = [c] asymptote.</p>

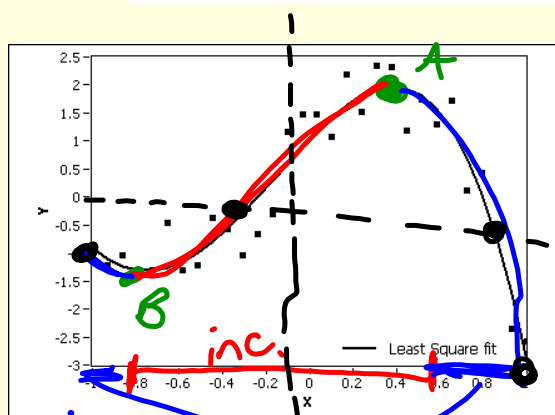
Polynomial Models

$$y = a_n x^n + a_{n-1} x^{n-1} + \dots + a_2 x^2 + a_1 x + a_0$$



Polynomial Models

$$y = a_n x^n + a_{n-1} x^{n-1} + \dots + a_2 x^2 + a_1 x + a_0$$



y-intercept: *dec.*

$(0, 1)$

x-intercept:

$(-0.3, 0)$ and $(0.8, 0)$

local maximum:

$A: (0.4, 2)$

local minimum:

$B: (-0.8, -1.7)$

Interval(s) $f(x)$ is increasing:

$B \rightarrow A$ $-0.8 < x < 0.4$

Interval(s) $f(x)$ is decreasing:

$-1 < x < -0.8$

$0.4 < x < 1$

Homework Assignment:

177:1-2, 190-191: 1, 2, 4, 5, 6