Pre-Assessment

5	(AM) Advanced Mastery 100%
4	(M) Mastery 93%
3	(VM) Vital Mastery 82%
2	(FM) Foundational Mastery 70%
1	(NYM) Not Yet Mastered 45%
0	(NA) No Attempt 0%

Name: _____

Per: _____ Date: _____

Assessment

IM2 – 3.2 (Pre) Key Characteristics of Quadratics in Context

Standards & Skill Mastery

Student Self-Score	Skills Assessed / Goals	Teacher Score
	F.IF.4 – I can graph & create a table using Desmos.com, sketch the graph, and interpret the graph in context (Q: 1, 2, 5, 6, 7, 8)	
	F.IF.5 – I can describe the domain of the function in context (Q: 3, 4)	
	F.IF.6 – I can calculate and interpret the average rate of change in context (Q: 9, 10)	
	SMP – I can self-reflect and clearly communicate my plan for improvement.	

Pre-Assessment Plan

Check all that apply. To study for this assessment, I will…
- ☐ independently, rework the pre-assessment.
- ☐ complete all of my practice.
- ☐ watch tutorials online.
- ☐ study my notes until I understand them.
- ☐ work through practice problems & recheck answers.

My plan to study to maintain or improve my mastery is…

- What: _____

  _____

- When: _____

  _____

How: _____

_____

Key Terms, Formulas, & Notes

$$Slope\ Formula \equiv \frac{y_2 - y_1}{x_2 - x_1}$$

Directions - *Answer each of the following questions with the context, above it, in mind:*

Context: September Mourning's main source of income is selling merch at their shows. Their hoodie is their best seller. Their annual profit (in thousands of dollars), P(x), as a function of the price, x, of each hoodie sold (in dollars) is modeled by: $P(x) = -\frac{1}{25}x^2 + \frac{18}{5}x - 11$

1. Make a clear sketch of the graph, below. Label the quantities (with measurement) for each axis, as well as intervals, intercepts, and the vertex. Write neatly!

2. Fill in the table of values below:

x	P(x)
0	
5	
15	
35	
45	
50	
60	
75	
85	

3. Use inequality notation to describe the domain:

4. Use inequality notation to describe the:
   Interval of increase: *Interval of decrease:*

5. What price(s) for hoodies will result in no profit?

6. How much did the band initially invest into producing their hoodies?

7. Which price(s) of hoodie will produce the maximum monthly profit?

8. What will September Mourning's monthly profit be if they sell hoodies for $60 dollars each?

9. What is the average rate of change in profit, in thousands of dollars, for hoodies sold between $15 and $50?

10. What is the average rate of change in profit, in thousands of dollars, for hoodies sold between $35 and $75?