Produce Stand   *M017 scoring rubric*

Math Domain

- [ ] Number/Quantity
- [ ] Shape/Space
- [✓] Function/Pattern
- [ ] Chance/Data
- [ ] Arrangement

Math Actions (possible weights: 0 through 4)

- [2] Modeling/Formulating
- [1] Manipulating/Transforming
- [2] Inferring/Drawing Conclusions
- [1] Communicating

Math Big Ideas

- [ ] Scale
- [ ] Reference Frame
- [ ] Representation
- [✓] Continuity
- [ ] Boundedness
- [ ] Invariance/Symmetry
- [ ] Equivalence
- [ ] General/Particular
- [ ] Contradiction
- [ ] Use of Limits
- [✓] Approximation
- [ ] Other

1. One reasonable answer is that the stand opened for business at 8:00 a.m., and the display was restocked with 100 more oranges at 10:15 a.m.

2. The oranges sold most quickly between 9 and 10 a.m. During this hour, the oranges sold at a rate of over 65 oranges/hour.

   This answer can be justified computationally by computing each hour's net change in the number of oranges: about 35 between 8 and 9 a.m., about 65 between 9 and 10 a.m., about 35 (after an adjustment for the restocking) between 10 and 11 a.m., and about 30 between 11 a.m. and 12 noon.

   To justify the answer graphically, note that the slope of the graph (which represents the rate of sales) is the steepest or the most negative during the 9 to 10 a.m. hour.

	partial level (1 or 2)	full level (3)
Modeling/ Formulating (weight: 2)	Formulates a graphical approach to **2c** that is only partially correct.	Devises a graphical procedure for answering **2c**, involving a visual conception of slope.
Transforming/ Manipulating (weight: 1)	In **2b**, provide a set of computations that is incorrect or incomplete (e.g., with some of the hour intervals missing).	In **2b**, correctly performs computations of how many oranges were sold in each of the four hour intervals.
Inferring/ Drawing Conclusions (weight: 2)	Gives answers for **1a** or **1b** that aren't consistent with the graph, or incorrectly answers **2a**.	Gives answers for **1a** and **1b** that are plausible and consistent with the graph. Gives the correct answer for **2a**.
Communicating (weight: 1)	States numerical answers clearly but does not give an adequate explanation in **2c**.	States all answers clearly, especially in **2c** where an explanation is needed.