Name _____

Triathlon Training

Shelly is training for a triathlon. In the triathlon she will ride her bike, run, and swim. Answer questions 1–3. Show your work, and write all fractions in simplest form.

1. Each week Shelly rides her bicycle 3 miles farther than the week before.

Training (weeks)	1	2	3	4	5	6
Riding (miles)	3	6	9	12	15	?

a. Describe the rule that relates the number of weeks Shelly has been training to the number of miles she rides.

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b. If she continues training by the same rule, how many miles will Shelly ride during her 6th week of training?

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2. Shelly also trains to increase the number of minutes she can run without stopping. She plans to graph the data she has collected.

Training (weeks)	1	2	3	4	5	6
Non-Stop Running (minutes)	$3\frac{1}{2}$	7	$10\frac{1}{2}$	14	$17\frac{1}{2}$	21

a. List the ordered pairs Shelly should graph.

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b. Would a scale of 0–25 be appropriate for the graph's x-axis? Explain.
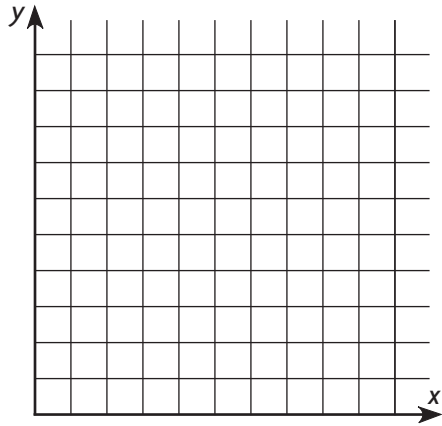
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c. Graph Shelly's data on the coordinate grid below.

3. Shelly has started swim training, too. Her times in minutes for her first 10 half-mile swims are: $20\frac{1}{2}$, 21, $20\frac{3}{4}$, $21\frac{1}{4}$, 21, $20\frac{3}{4}$, 21, $20\frac{3}{4}$, 21, 21.

a. Make a line plot to represent this data.

b. Shelly's training partner Ray says her average (mean) swim time is 21 minutes. Is Ray correct? If yes, how do you know? If no, by how many minutes is Ray incorrect?

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TASK SUMMARY

Students will use line plots, coordinate grids, and relationships between numerical patterns.

REPRESENTATION

In this task teachers can…

- Improve comprehension by using color-coding to differentiate between *x*-coordinates and *y*-coordinates.

- Guide students in understanding an ordered pair is always in (*x*, *y*) order by using verbal cues. Have students say "units along the *x*-axis" or "units along the *y*-axis" when they read an ordered pair. For example, (3, 4) would be "3 units along the *x*-axis, 4 units along the *y*-axis"

ACTION and EXPRESSION

In this task teachers can…

- Use multiple tools to help students practice and prepare, such as online applications that let students identify and plot ordered pairs.

ENGAGEMENT

In this task, teachers can…

- Minimize pressure on students to interact socially and foster collaboration and community by offering small group discussions of the tasks once they are completed.

EXPECTED STUDENT OUTCOMES

- Complete the task within the time allowed
- Reflect engagement in a productive struggle
- Apply line plots, coordinate grids, and relationships between numerical patterns to represent and solve word problems

SCORING

Use the associated Rubric to evaluate each student's work.