7th Grade Topic 5 Unit 2 Name

The Big Race Date Period



One of the annual events at school during Spirit Week is a tricycle race held in the gym. Leslie, a member of your class, has won the race each of the last three years and is starting to brag about it. The rest of the class is annoyed by this attitude and wants to end this winning streak.

For each person described, neatly graph the person’s situation. Use a different color or marking for each person.

1. Leslie rides at a constant rate of 2 meters per second.
2. Dina wants to see if she can win the Big Race with a 3 meter head start. If she can ride her tricycle 1 meter per second, can she beat Leslie?
3. Dean estimates he rides 3 meters every 4 seconds and wants a 2 meter head start.
4. Bob usually rides 3 meters in 2 seconds and will get a 5 meter head start.
5. Elizabeth rides 1 meter in 4 seconds and wants a 6 meter head start.
6. Brian starts 3 seconds late and catches up to Dina 7 seconds after the race begins.

Examine your graph of all the tricyclists in the Big Race and answer the questions below.

1. Suppose the Finish Line is 25 meters from the Starting Line. Who won the race? What time did the winning rider have? How do you know?

2. Who won and what’s the winning time if the Finish Line is 30 meters from the Starting Line?

 How do you know?

3. If the race lasted 12 seconds, who went the farthest? How do you know?

4. The Finish Line is 25 meters from the Starting Line. In what order did the participants finish the race? How did you decide this?

|  |  |  |
| --- | --- | --- |
| **Place** | **Name** | **Time** |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |

5. After 8 seconds, which tricyclist had traveled the shortest distance? The farthest distance? How did you decide this?

6. How long would the race need to be so that Bob won? How did you decide this?

7. How long will it take Elizabeth to finish the 25-m race? How did you decide this?

8. What does the unit rate represent in this situation?

9. Are any of these relationships proportional? Explain how you know.

10. Find the slope, y-intercept, and equation of the graph of each tricyclist.

|  |  |  |  |
| --- | --- | --- | --- |
|  **Tricyclist** | **Slope** | **y-intercept** | **Equation** |
| Leslie |  |  |  |
| Dina |  |  |  |
| Dean |  |  |  |
| Elizabeth |  |  |  |
| Bob |  |  |  |
| Brian |  |  |  |