**Main Problem #7**

Topic: *Comparing Fractions*

Problem: You and two friends, Tristan and Samantha, are competing in a hot dog eating contest, in which the winner is the first person to finish eating 50 hot dogs. A judge keeps track of the time and announces the fraction of the 50 hot dogs you, Tristan, and Samantha have eaten every 5 minutes.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| NAME/MINUTES | 5 | 10 | 15 | 20 | 25 | 30 |
| You | $$\frac{6}{50}$$ | $$\frac{6}{25}$$ | $$\frac{11}{25}$$ | $$\frac{12}{25}$$ | $$\frac{19}{25}$$ | $$\frac{21}{25}$$ |
| Tristan | $$\frac{1}{10}$$ | $$\frac{18}{50}$$ | $$\frac{19}{50}$$ | $$\frac{3}{5}$$ | $$\frac{41}{50}$$ | $$\frac{47}{50}$$ |
| Samantha | $$\frac{2}{25}$$ | $$\frac{12}{50}$$ | $$\frac{1}{2}$$ | $$\frac{33}{50}$$ | $$\frac{4}{5}$$ | $$\frac{2}{2}$$ |

Q1. Who ate the most hot dogs after 5 minutes?

Q2. Who ate the most hot dogs after 10 minutes?

Q3. Who ate the most hot dogs after 15 minutes?

Q4. Who ate the most hot dogs after 20 minutes?

Q5. Who ate the most hot dogs after 25 minutes?

Q6. Who was the first to finish eating all the hot dogs?

**Note:** For the next six questions, students will have to apply their knowledge of the Least Common Multiple in order to transform all the fractions so that they have the same denominator. All the conversion are below.

**Key:** Let*x* represents any whole number:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| $$\frac{x}{2}⋅\frac{25}{25}=\frac{25x}{50}$$ | $$\frac{x}{5}⋅\frac{10}{10}=\frac{10x}{50}$$ | $$\frac{x}{10}⋅\frac{5}{5}=\frac{5x}{50}$$ | $$\frac{x}{25}⋅\frac{2}{2}=\frac{2x}{50}$$ | $$\frac{x}{50}⋅\frac{1}{1}=\frac{x}{50}$$ |

A1. You because $\frac{6}{50}>(\frac{1}{10}=\frac{5}{50})>(\frac{2}{25}=\frac{4}{50})$

A2. Tristan because $\frac{18}{50}>(\frac{12}{50}=\frac{6}{25})$

A3. Samantha because $(\frac{1}{2}=\frac{25}{50})>(\frac{11}{25}=\frac{22}{50})>\frac{19}{50}$

A4. Samantha because $\frac{6}{50}>(\frac{1}{10}=\frac{5}{10})>(\frac{2}{25}=\frac{4}{50})$

A5. Tristan because $\frac{41}{50}>(\frac{4}{5}=\frac{40}{50})>(\frac{19}{25}=\frac{38}{50})$

A6. Samantha because $(\frac{2}{2}=\frac{50}{50}=1)>\frac{47}{50}>(\frac{21}{25}=\frac{42}{50})$