Warm Up

10/8

Find the equation of the line that passes through the points (20, 5) and (24, 7).

$+4 \langle \begin{matrix} 20, 5 \\ 24, 7 \end{matrix} \rangle +2$

$\frac{\Delta y}{\Delta x} = \frac{2}{4} = \frac{1}{2}$

$y = \frac{1}{2}x + b$

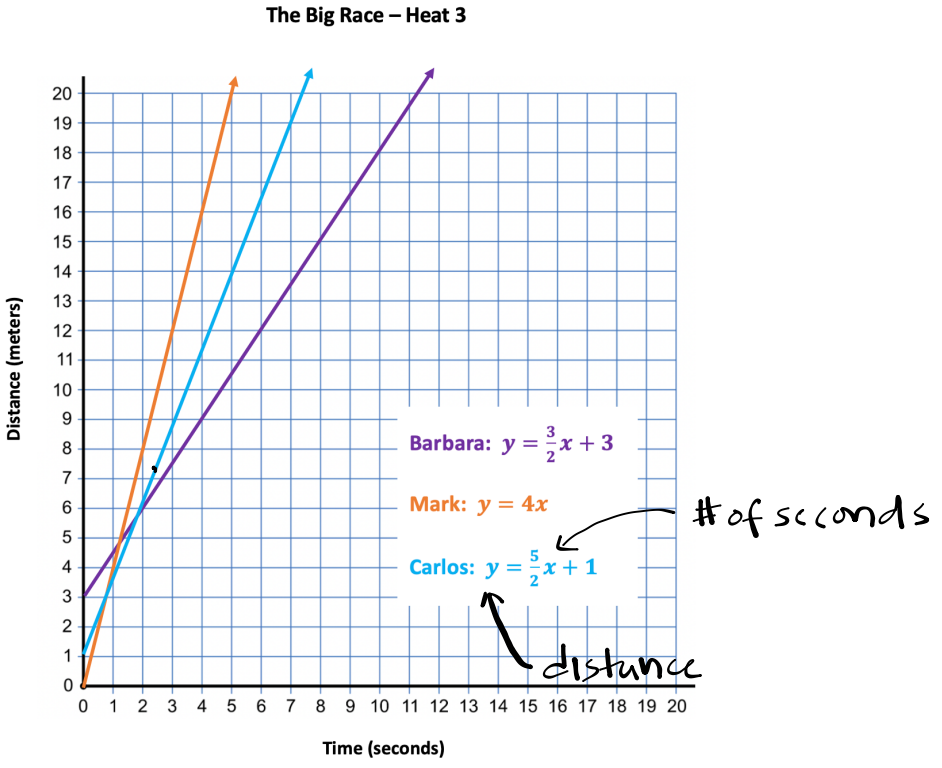
$5 = \frac{1}{2}(20) + b$

$5 = 10 + b$

$-10 \quad -10$

$-5 = b$

$y = \frac{1}{2}x - 5$



When did Carlos and Barbara meet?

Looking at graph: ~2 seconds

$$\frac{5}{2}x + 1 = \frac{3}{2}x + 3$$
$$-1 \qquad -1$$

$$\frac{5}{2}x = \frac{3}{2}x + 2$$
$$-\frac{3}{2}x \qquad -\frac{3}{2}x$$

$$\frac{2}{2}x = 2$$

$x = 2$ They will meet at 2 seconds

THE BIG RACE – FINALS

Today is the final event of "The Big Race"! Your teacher will give you each a card that describes how you travel in the race. You and your study team will compete against the heat 1 and 2 winners, Leslie and Elizabeth, at today's rally in the gym. Unfortunately, Mark, the winner of heat 3, is absent from school and will not be participating against you.

Your Task: As a team, you each will do the following:

- Draw a graph showing all of the racers' progress over time. Identify the independent and dependent variables and use intervals of 1 on each axis.

- Write an equation for each participant.

- Figure out who wins the race!

Rules:

- You must work cooperatively to solve the problem. No single team member has enough information to solve the problem alone.
- Each member of the team will be given a rider card (A, B, C, or D). You may **not** show your card to your team. You must communicate the information.
- Assume that each racer travels at a constant rate throughout the race.
- Elizabeth's and Leslie's cards will be shared by the entire team.

Use your results from "The Big Race – Finals " to answer the following questions. You may answer the questions in any order, but be sure to justify each response.

a. Who won the finals of The Big Race? Who came in last place?

b. How fast was Rider D traveling? How fast was Elizabeth traveling?

c. At one point in the race, four different participants were the same distance from the starting line. Who were they and when did this happen?