

Comparing Racing Times

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NAME _____

DATE _____

TIME _____

Katya runs at a rate of 6.25 meters per second. Her younger cousin, Liova, runs 2.5 meters per second. Because Katya runs faster than Liova, she gives Liova a 100-meter head start in a 200-meter race.

- ① Using the variable t to represent the number of seconds, write two expressions—one for Katya and one for Liova—that model how far from the start line they will be after t seconds.

Expression for Katya: 6.25t Expression for Liova: 2.5t + 100

- ② Use your expressions from Problem 1 to figure out who will win the race. Show your work and explain your answer.

Winner: Katya

Sample explanation: Katya runs 200 meters in 32 seconds.

$$6.25t = 200; 6.25(32) = 200$$

Liova runs the last 100 meters of the race in 40 seconds.

$$2.5t + 100 = 200; 2.5(40) + 100 = 200$$

Practice

Solve.

③ 5% of 66 is 3.3.

④ 18% of 50 is 9.

⑤ 45% of 120 is 54.

⑥ 90% of 8,000 is 7,200.