

2-61. THE BIG RACE – HEAT 3

Barbara, Mark, and Carlos participated in the third heat of “The Big Race.” Barbara thought she could win with a 3 meter head start even though she only pedaled 3 meters every 2 seconds. Mark began at the starting line and finished the 20 meter race in 5 seconds. Meanwhile, Carlos rode his tricycle so that his distance (y) from the starting line in meters could be represented by the equation $y = \frac{5}{2}x + 1$, where x represents time in seconds.



- What is the dependent variable? What is the independent variable?
- Using the given information, graph lines for Barbara, Mark, and Carlos on the same set of axes. Who won the 20 meter race and will advance to the final race?
- Find equations that describe Barbara’s and Mark’s motion.
- How fast did Carlos pedal? Write your answer as a unit rate.
- When did Carlos pass Barbara? Confirm your answer algebraically.