

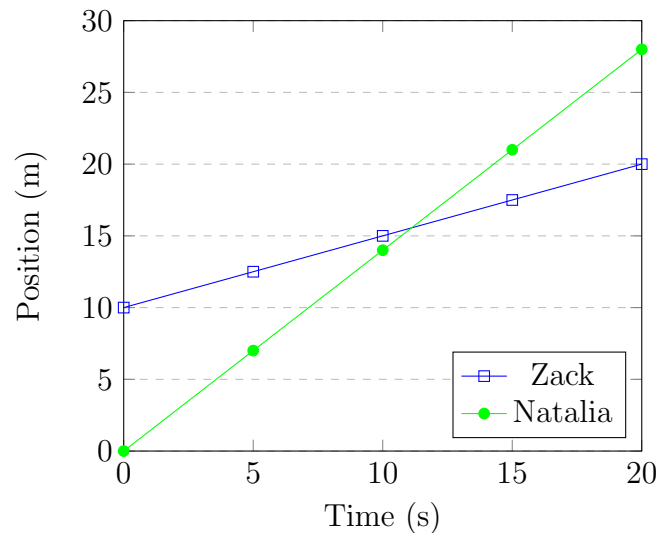


Name: \_\_\_\_\_

Due Date: \_\_\_\_\_

### Assignment 3.01: Position vs Time Graphs

Graph 1: Position vs Time for Two People

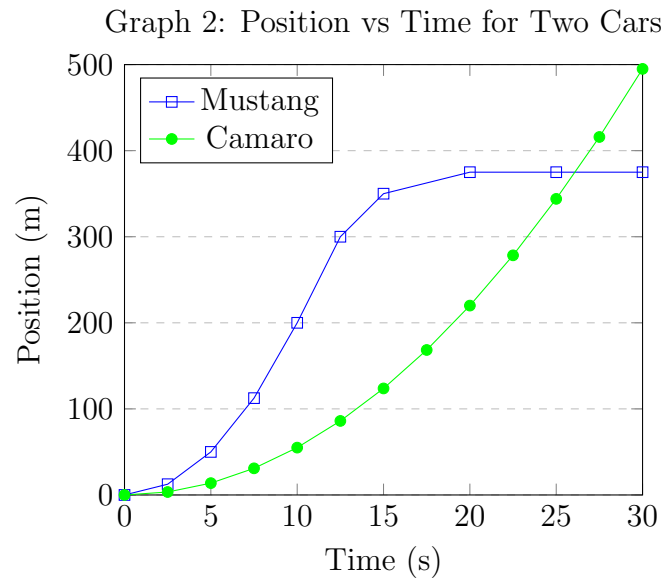


1. Use Graph 1 to determine the following:
  - (a) Where is Zack located at  $t=5$  seconds?
  - (b) Without calculating speeds, who is moving faster, Zack or Natalia? Explain your reasoning.
  - (c) What is Zack's Speed?
  - (d) What is Natalia's Speed?
  - (e) What is Zack's Acceleration?
  - (f) Who starts ahead, Zack or Natalia? Explain your reasoning.
  - (g) Who ends ahead, Zack or Natalia? Explain your reasoning.
  - (h) Who has the greater acceleration, Zack or Natalia? Explain your reasoning.
  - (i) Graph 1 describes a race between Zack and Natalia. In at least 4 complete sentences, describe what happened during this race.



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2. Use the Graph 2 to answer the following questions:

(a) Which car has the greater acceleration during the first 10 seconds?

(b) Which car slows down and stops?

(c) Which car is traveling faster at  $t=10$  seconds?

(d) Which car is traveling faster at  $t=20$  seconds?

(e) This graph describes a race between two cars that are racing 400 meters (approximately  $\frac{1}{4}$  of a mile). In a paragraph of at least 5 sentences, explain what happens during the race.