

CHAPTER 13 PROJECT

Rideshare Function



A certain rideshare company charges \$3.00 to pick up a passenger and an additional \$0.90 for each mile or fraction of a mile that the passenger is driven.

1. Graph a function $C(x)$ that reflects the cost to a passenger for a ride of x miles over the x -interval $[0, 5]$.
2. Find and classify all points of discontinuity of the function C .
3. If it exists, determine $\lim_{x \rightarrow 1.7} C(x)$. If the limit does not exist, determine the one-sided limits, if possible.
4. If it exists, determine $\lim_{x \rightarrow 2} C(x)$. If the limit does not exist, determine the one-sided limits, if possible.
5. If it exists, determine $C'(1.7)$.
6. Is $C'(x)$ defined for every nonnegative x ? If not, where is $C'(x)$ not defined?
7. What is the first interval of distance over which a passenger can ride and pay their fare in dollars with no change necessary? How much will the fare be?