A commuter is driving along a highway on which the speed limit is 60 miles per hour when he unknowingly runs into a speed trap involving two police officers. The first officer is positioned at mile marker 92 and clocks the commuter's car at 55 miles per hour. Five minutes later, a second police officer at mile marker 98 clocks the car at 60 miles per hour. Can the commuter be charged with a speeding violation?

Solution:

Find average speed of the commuter between mile marker 92 and mile marker 98:

$$average\ speed = \frac{Total\ distance}{Total\ time}$$

$$Total\ distance = 98 - 92 = 6\ miles$$

$$Total\ time = 5\ minutes = \frac{5}{60} hour = \frac{1}{12}\ hour$$

$$average\ speed = \frac{Total\ distance}{Total\ time} = \frac{6}{1/12} = 6 \cdot 12 = 72\ miles\ per\ hour$$

Average speed between markers is 72 miles per hour and more than speed limit 60 miles per hour, so the commuter can be charged with a speeding violation.

Answer: the commuter can be charged with a speeding violation