

Question

A blue car is moving forward along a straight line. The distance the blue car travels (in meters) from its starting position t seconds after it started moving is given by $s(t) = 5t^2$.

Select each of the true statements from the following:

Answerlist

- The average speed of the blue car on the interval $[10, 11]$ is greater than $s(10)$.
- Suppose the red car travels at a constant speed and travels a distance of 605 meters on the interval $[10, 11]$. The average speed of the blue car on this interval is the same as the constant speed of the red car.
- All statements are false, except this one.

Solution

Answerlist

- False. The average speed of the blue car on the interval $[10, 11]$ is

$$\frac{s(11) - s(10)}{11 - 10} = \frac{605 - 500}{1} = 105$$

which is less than $s(10) = 500$

- False. The blue car travels a distance of 105 meters over the interval $[10, 11]$. The red car which travels at a constant speed travels a distance of 605m \neq 105m. Therefore, the average speed of the blue car on this interval is the **not** the same as the constant speed of the red car.
- True. This statement is true.

Meta-information

extype: mchoice exsolution: 001 exname: AverageRateOfChange