

Calculus 2 1 Average and Instantaneous Rate of Change

Lesson 258 | Calculus AB | Average and instantaneous rates

<https://www.youtube.com/watch?v=xWbCmkn48xo>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Position is $s(t)=7t^2+10t$ for $t \geq 0$. Find average velocity on $[3,4]$ and instantaneous velocity at $t=3$.

02

Position is $s(t)=7t^2+4t$ for $t \geq 0$. Find average velocity on $[4,5]$ and instantaneous velocity at $t=4$.

03

Position is $s(t)=10t^2+4t$ for $t \geq 0$. Find average velocity on $[5,6]$ and instantaneous velocity at $t=5$.

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04

Position is $s(t)=8t^2+5t$ for $t \geq 0$. Find average velocity on $[7,8]$ and instantaneous velocity at $t=7$.

05

Position is $s(t)=5t^2+6t$ for $t \geq 0$. Find average velocity on $[6,7]$ and instantaneous velocity at $t=6$.

06

Position is $s(t)=10t^2+13t$ for $t \geq 0$. Find average velocity on $[2,3]$ and instantaneous velocity at $t=2$.

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01

Position is $s(t)=7t^2+10t$ for $t \geq 0$. Find average velocity on $[3,4]$ and instantaneous velocity at $t=3$.

Average = $[s(4)-s(3)]/1=59$. Differentiate: $v(t)=14t+10$; $v(3)=52$.

02

Position is $s(t)=7t^2+4t$ for $t \geq 0$. Find average velocity on $[4,5]$ and instantaneous velocity at $t=4$.

Average = $[s(5)-s(4)]/1=67$. Differentiate: $v(t)=14t+4$; $v(4)=60$.

03

Position is $s(t)=10t^2+4t$ for $t \geq 0$. Find average velocity on $[5,6]$ and instantaneous velocity at $t=5$.

Average = $[s(6)-s(5)]/1=114$. Differentiate: $v(t)=20t+4$; $v(5)=104$.

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04

Position is $s(t)=8t^2+5t$ for $t \geq 0$. Find average velocity on $[7,8]$ and instantaneous velocity at $t=7$.

Average = $[s(8)-s(7)]/1=125$. Differentiate: $v(t)=16t+5$; $v(7)=117$.

05

Position is $s(t)=5t^2+6t$ for $t \geq 0$. Find average velocity on $[6,7]$ and instantaneous velocity at $t=6$.

Average = $[s(7)-s(6)]/1=71$. Differentiate: $v(t)=10t+6$; $v(6)=66$.

06

Position is $s(t)=10t^2+13t$ for $t \geq 0$. Find average velocity on $[2,3]$ and instantaneous velocity at $t=2$.

Average = $[s(3)-s(2)]/1=63$. Differentiate: $v(t)=20t+13$; $v(2)=53$.