

1/28 P1

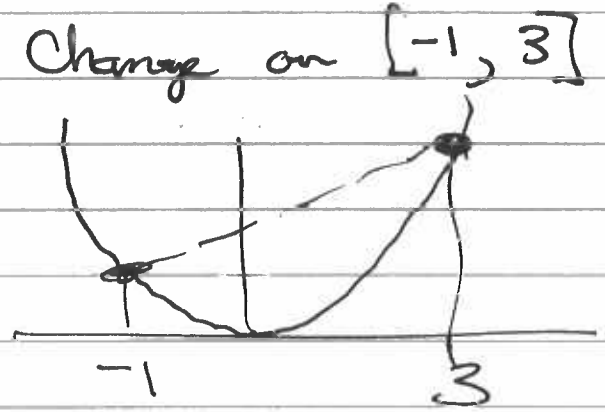
Warm up:

Find average rate of Change on  $[-1, 3]$

if  $y = x^2$

Solution:

$$\frac{3^2 - (-1)^2}{3 - (-1)} = \frac{8}{4} = 2$$



From yesterday:

ARC of  $h(t) = -16t^2 + 75t + 6$

on:

$[0, 1] \rightarrow 59 \text{ f/s}$   
 $[\frac{1}{2}, 1] \rightarrow 51 \text{ f/s}$

Mathematica Exponent: Shift + 6  
1

What is ARC for these intervals?

t	$[t, 1]$	ARC
0.5	$[0.5, 1]$	51 f/s
0.6	$[0.6, 1]$	49.4 f/s
0.7	$[0.7, 1]$	47.8 f/s
0.8	$[0.8, 1]$	46.2 f/s
0.9	$[0.9, 1]$	44.6 f/s
1.0		Undefined

Getting Smaller  
 -1.6  
 But ARC  $\rightarrow 43$   
 as  $t \rightarrow 1$

$t$	ARC $[1, t]$
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2	27
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1.8	30.2
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1.6	33.4
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1.4	36.6
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1.2	39.8
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	3.2
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	<u>43.0</u>
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As  $t \downarrow$  by .2

ARC  $\uparrow$  by 3.2

as  $t \downarrow$  1

ARC  $\uparrow$  (to 43.0?)