

SCORE: 24 / 10 POINTS

What month is your birthday?

What are the first 2 digits of your address?

What are the last 2 digits of your zip code?

What are the last 2 digits of your social security number?

[IF YOU DO NOT HAVE A SOCIAL SECURITY NUMBER,
USE YOUR STUDENT ID NUMBER]

1	2
7	8
1	4
2	3

Estimate the slope of $f(x) = \ln x$ at $x = 6$ by using the method of secant lines discussed in class. $-1\frac{1}{2}$ SCORE: 0 / 4 POINTSShow 6 points you used, and the corresponding slopes. You must use 3 points on each side of $x = 6$. Round your slopes to 4 decimal places.

POINT	SLOPE OF SECANT LINE	POINT	SLOPE OF SECANT LINE
$(5.9, 1.77495)$	$\frac{1.77495 - 1.79176}{5.9 - 6} = 0.1681$	$(5.9999, 1.79174)$	$= 0.2000$
$(5.99, 1.79009)$	$= 0.1670$	$(5.9999, 1.79175)$	$= 0.4000$
$(5.999, 1.79159)$	$= 0.1700$	$(5.99999, 1.79176)$	$= 1.000$

ESTIMATED SLOPE OF $f(x) = \ln x$ AT $x = 6$: 1

1.79176

You want to estimate the length of the curve $f(x) = x^2 - 6x$ from $x = 0$ to $x = 12$ to four decimal places using 4 line segments (at equally spaced x -values).SCORE: 24 / 4 POINTS

[a] Write down the numerical expression you would need to enter into your calculator to find that length.

 $(0, 0), (3, -9), (6, 0), (9, 27), (12, 72)$

$$\sqrt{(3-0)^2 + (-9-0)^2} + \sqrt{(6-3)^2 + (0+9)^2} + \sqrt{(9-6)^2 + (27-0)^2} + \sqrt{(12-9)^2 + (72-27)^2}$$

$\frac{3}{4} \quad \frac{3}{4} \quad \frac{3}{4}$

[b] Use your calculator to find the length using the method in [a]. Round your answer to 4 decimal places.

94.9604

[MULTIPLE CHOICE] Estimate the length of the curve $f(x) = x^3$ from $x = -5$ to $x = 4$ to four decimal places using 3 line segments (at equally spaced x -values).SCORE: 0 / 2 POINTS

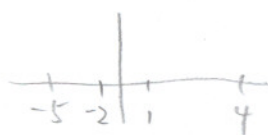
[a] 189.5967

[b] 189.7168

[c] 189.9004

[d] 190.0773

LETTER OF CORRECT ANSWER: [C]



$(-5, -125) \quad (4, 64) \quad (-5+2)^2 + (-125+8)^2$
 $(-2, -8)$
 $(1, 1)$