

SCORE: ___ / 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]**SUBTRACT ANY POINTS LISTED HERE**Estimate the slope of $f(x) = \ln x$ at $x = 6$ by using the method of secant lines discussed in class.

SCORE: ___ / 4 POINTS

Show 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.POINTSLOPE OF SECANT LINEPOINTSLOPE OF SECANT LINE($a, \ln a$) $\frac{\ln a - \ln 6}{a - 6}$ **USE YOUR CALCULATOR TO
(CHECK THAT YOUR SLOPE
EQUALS TO THIS EXPRESSION
FOR EACH POINT YOU USED)**

(,)

(,)

(,)

ESTIMATED SLOPE OF $f(x) = \ln x$ AT $x = 6$:0.1667**1 POINT** **$\frac{1}{2}$ POINT FOR
EACH CORRECT
SLOPE**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: ___ / 4 POINTS

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

 $\frac{3}{4}$ POINTS EACH

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

OR

$$\sqrt{3^2 + 9^2} + \sqrt{3^2 + 9^2} + \sqrt{3^2 + 27^2} + \sqrt{3^2 + 45^2}$$

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

91.2397**1 POINT**[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: ___ / 2 POINTS

[a] 189.5967

[b] 189.7168

[c] 189.9004

[d] 190.0773

LETTER OF CORRECT ANSWER: [**A**]