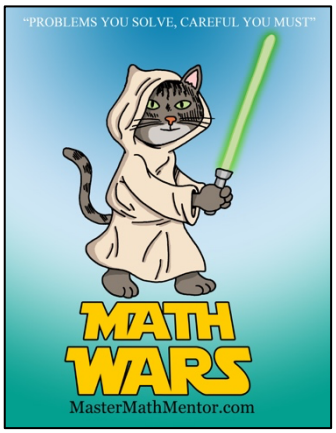
Math Wars – BC Calculus
Scrambled # 260



Maximum Time: 7.75 Minutes

Directions: To start, you need to download the Math Wars application on your cell phone: Use the QR code or the url: https://mastermathmentor.com/mmm/mathwars.ashx?key=260

When ready, start the timer and then solve the problems below, entering your choice, A, B, C, D and pressing Submit for each problem when you are sure of your answer. When complete, stop the timer. You will see problems you got correct in green and incorrect in red. You will receive a score based on how many problems you got right and your time. A perfect score is all problems correct using half the maximum time or less. You can text or email your friends with your results.

1. (1 pt) Let $P_4(x)=5-2(x-1)+6(x-1)^2+\frac{3}{8}(x-1)^4$ be the 4th degree Taylor polynomial for the function f about $x = 1$. What is the value of $f^{(4)}(1)$?

A. 9 B. $\frac{1}{64}$ C. $\frac{3}{8}$ D. $\frac{3}{256}$

2. (3 pts) Find the behavior of the curve at $t = 2$ of the parametric equations $x=10-t-t^2$ and $y=4t-1$.

A. increasing, concave up
B. increasing, concave down
C. decreasing, concave up
D. decreasing, concave down

3. (5 pts) If $f(x)=$ the first four nonzero terms of the Maclaurin polynomial $\frac{e^x-1}{x}$, find $f'(1)$

A. $\frac{47}{24}$ B. $\frac{41}{24}$ C. $\frac{23}{24}$ D. $\frac{7}{24}$

4. (7 pts) $\int_3^6 \frac{1}{(x-4)^3}\,dx =$

A. 1 B. $\frac{3}{4}$ C. $\frac{1}{4}$ D. divergent

5. (9 pts) Using the Integral test on $\sum_{n=4}^{\infty}\frac{2}{n^2-4n+3}$, the value of the integral is _____, leading to a conclusion that the series is _____.

A. $\ln\frac{1}{3}$, convergent B. ln 3, convergent C. $\ln\frac{1}{3}$, divergent D. ∞, divergent