Circuit Training – Review on Use of a Calculator in Calculus

NAME_________________________

Work the first problem in the space provided. Circle your answer. Find your answer among the choices. Put #2 in the problem blank. Work that question and proceed in this manner until finished. Write down what you will put in your calculator in standard mathematical notation, then calculate.

Answer: 1.269

#1____ What is the slope of the line tangent to $f(x)=1.2x^4+3x\sin^2 x$ at $x=0.4$?

Answer : 20.782

\# ______ A chemical to control insects is spread over farm land at a rate of $r(t)=\sqrt[3]{1+0.7t^2}$ gallons per minute, where *t* is measured in minutes. During the time interval $0\le t\le 15$, what is the average rate at which the chemical is spread?

Answer: 0.747

\# _____ A particle moves along the *x*-axis so that at any time $t\ge 0$ its velocity is given by $v(t)=\sin(t^2-4)$. If the particle is at $x=2$ when $t=0$, where is the particle at time $t=4.5$?

Answer: 13.725

\# ______ Let *R* be the region bounded by $f(x)=5-x^2$ and $g(x)=1+2^x$. The region *R* is the base of a solid where each cross section perpendicular to the *x*-axis is a square. What is the volume of the solid?

Answer: 1.709

\# _____ If $f'(x)=\dfrac{7}{\sqrt{x^2+1}}$ and $f(4)=8.5$, find $f(2)$.

Answer: 1.623

\# _____ Find the area enclosed by the functions $f(x)=5-2x-x^2$ and $g(x)=e^x$.

Answer: 22.269 #_____ A particle moves along the *x*-axis so that at any time $t \geq 0$ its velocity is given by $v(t) = \sqrt{t+3}\ln(t+5)$. What is the acceleration of the particle at time $t = 2.3$?	Answer: 16.425 # _____ The first derivative of a function f is given by $f'(x) = \cos\left(\frac{x}{2}\right) - 3\sin\left(x^2\right)$. For what value of x does the graph of f have a point of inflection on the interval (0,2)?
Answer: 16.484 # ______ The first derivative of a function f is given by $f'(x) = \cos\left(\frac{x}{2}\right) - 3\sin\left(x^2\right)$. For what value of x does f have a relative minimum on the interval (0,2)?	Answer: 3.322 # _____ A particle moves along the *x*-axis so that at any time $t \geq 0$ its velocity is given by $v(t) = \frac{3t}{e^{2t}} - 2t + 6$. What is the total distance traveled by the particle from $t = 0$ to $t = 5$?
Answer: 2.161 # _____ Snow is being removed from a driveway at a rate of $S(t) = 6 + \sin(0.4t)$ cubic feet per hour, where t is measured in hours since 6:00 A.M. How many cubic feet of snow are removed from 8:00 A.M. to 11 A.M.?	Answer: 3.942 # _____ Water flows out of a tank at a rate of $R(t) = t - t\cos\sqrt{t+3}$ gallons per minute. How many gallons of water flow out of the tank in the first 5 minutes?