Calculator Circuit   name _____

Use your calculator to complete the first problem in the space provided. All answers are truncated to 3 decimal places. Find your answer among the choices. Put "#2" in the answer plank for that problem. Then work that question and find its answer. Continue in this manner until you have worked all of the problems. Show work when possible.

Answer: -1.992	Answer: 1.526
#_1_	#_____
What is the slope of the line tangent to $f(x) = 1.2x^4 + 3x\sin^2 x$ at $x = 0.4$?	Evaluate $(51.4)^{\frac{3}{7}}$ *No work required.*
Answer: -0.321	Answer: 4.194
#_____	#_____
A remote control plane climbs at takeoff with a slope of $m = 0.178$. how far off the ground is the plane when it has travelled 24 feet in the horizontal direction after takeoff?	If the radius of a cone is 0.9 inches, and the height of the cone is twice the radius, what is the volume in inches³ of the cone? $$\left(V = \frac{1}{3}\pi r^2 h \right)$$
Answer: -0.175	Answer: 1.622
#_____	#_____
If $f(x) = \ln(x+4)$ and $g(x) = \tan(x^2)$, find $f(g(3.2))$. *No work required.*	Solve for x. $\lvert x^3 - 4x \rvert = 7 - x$ Find the sum of the two solutions.

Answer: 1.024

#_____

Let $f(x) = e^{x-4} + 2.5x - 11.7$. Find the zero of the function.

Answer: -1.477

#_____

If $g(x) = \sin^2(2x)$, find $g'(1.2)$.

No work required.

Answer: 1.268

#_____

The first derivative of a function f is given by $f'(x) = \cos\left(\dfrac{x}{2}\right) - 3\sin(x^2)$. For what value of x does the graph of f have a relative minimum on the interval (0,2)?

Answer: 0.747

#_____

The first derivative of a function f is given by $f'(x) = \cos\left(\dfrac{x}{2}\right) - 3\sin(x^2)$. For what value of x does the graph of f have a point of inflection on the interval (0,2)?

Answer: 4.272

#_____

Solve for x. $(2x+1)^{-2} = 10 - e^{x^2+2}$

Find the smallest solution.

Answer: 1.709

#_____

The volume of a sphere is 4.5 m³, find the radius of the sphere. $\left(V = \dfrac{4}{3}\pi r^3 \right)$

Answer: 5.410

#_____

If $f(x) = x^5 - 2x^4 + \sin^2 x + k$, find k so that $f(2.1) = 1.212$.

Answer: 1.621

#_____

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 the time $t = 2.3$?