

This quiz is worth 10 points, and you have 10 minutes to complete it. Show all work in detail, and circle your final answer.

Calculators are NOT allowed today.

1. (0 pts) Consider the function $f(x) = -2\sin\left(\frac{\pi}{4}(x - 2)\right) + 8$.

(a) Find a “center point” for this general sine function: (____ , ____).

(b) Find *another* “center point” for this function: (____ , ____).

2. (0 pts) Use the formulas for the derivatives of sine and/or cosine to prove that

$$\frac{d}{dx}(\cot x) = -\csc^2 x.$$

(Note that this is a PROOF, so please write clearly and in order, and justify your steps.)