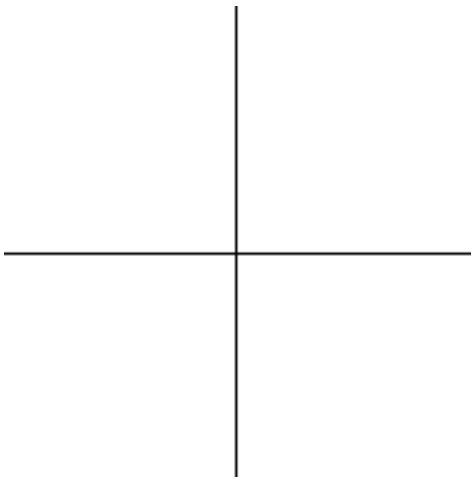
Name:

QUIZ 20 – MATH IB HL

1. (65%) Given the function $f(x) = -\sqrt{-2x+10} + 2$
   a. (8%) State the domain of the function: _____
   b. (8%) Find all the corresponding points/limit(s) (if any) **and conclusions**:



   c. (5%) $f(-3) =$ _____, Fill the blank and sketch the point on the graph.

   d. (8%) $f(\_\_\_\_) = -2$

      Fill the blank and sketch the point on the graph.

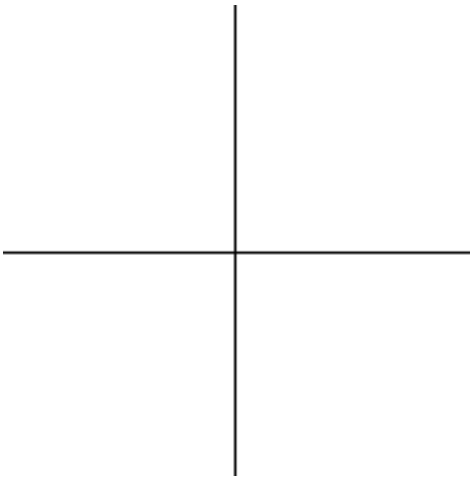
   e. (4%) y intercept: _____

   f. (6%) x intercept: _____

   g. (5%) Sketch the function

   h. (6%) Range: _____

Given the function $-f(\frac{x}{2})$



   i. (10%) Sketch it on the following graph, indicate the location of all the points from parts c and d on the graph.

   j. (5%) Find its expression.

$-f(\frac{x}{2}) =$ _____

2. (35%) Given that the function $T(x) = A\sqrt{x+C} + 100$ that models the amount of time in seconds it takes an elevator to pass a certain distance as a function of the strength of its engine in watt. It is known that as the stronger the engine is, the amount of time decreases.

   a. (5%) x represents the_____

   b. (5%) T(x) represents the _____

   c. (8%) It is known that when the engine size is 10 watt it passes the distance in 88 seconds. Express A in terms of C. Use your result to write the function in terms of x and C only.

   d. (9%) It is also known that T(17) = 84 . Find C. Write down the function.

   e. (8%) Graph the function, label the axis, find and indicate the significant points on the graph.