

Name: \_\_\_\_\_

GTID: \_\_\_\_\_

Answer the questions in the spaces provided and BOX your answer. Organize and show your work for full credit.

- 1a. Find the midpoint between  $(-1, 3)$  and  $(2, 1)$ .

*Hint: use a sketch to check your answer.*

- 1b. Find the equation of the line passing through  $(-1, 3)$  and  $(2, 1)$ .

*Hint: these are the same points from #1a.*

2. Graph:  $y = -|x| + 2$ . On your graph label the  $x$ -intercepts and  $y$ -intercept.

*Hint: transform the graph of  $y = |x|$  using the techniques from class.*

3. Find the domain of  $f(x) = \frac{x^2-9}{\sqrt{4-x}}$ .

*Note: show work or justify your answer for full credit.*

4. Suppose  $f(x) = x^2 - x + 1$  and  $g(x) = \sqrt{x-1}$ , and find  $f(g(5))$ .

5. Given the function  $f(x) = -x^2 + 4$  with domain  $D : [-1, 3]$ , what is the range of the function on this interval?

*Hint: sketch the function by transforming the graph of  $y = x^2$  using the techniques from class.*