

Place your name on the back of this sheet of paper and nowhere else. Staple your answers face up on the front of this sheet of paper. Failure to follow these directions will cost you 10 points. If you use double-sided printing or print on the back of scrap paper, I will give you one additional point.

Show all work on all questions.

1) (5 points each) Plot each of the following intervals and briefly state how you did it.

A) $5 < x \leq 9$

B) $(-\infty, 8]$

C) $x \geq 3$

D) $[4, 6]$

2) (20 points) Plot the point $(3, -2, 1)$. Briefly state how you did it.

3) (10 points) Find the distance between $(7, -3, 5, 9, -2)$ and $(-2, 2, 11, 8, -3)$

4) On Page 49, they are plotting $Y = aX^b$ for $b > 1$ and $b < -1$. The latter really should be for $b < 0$.

A) (15 points) Plot the function for $0 < b < 1$.

B) (15 points) Plot the function for $b = 0$.

5) (5 points) Is the graph of the function for #4A strictly concave, concave, convex, strictly convex, or none of them? Explain your logic.

6) (5 points each) For each of the graphs determine if the set is a strictly convex set, convex set or neither. Briefly explain your logic.

