Algebra 2
Chapter 2 Test- Practice Test
Calculator Allowed

Mathematician_____
Per _____

LT #6: Families of Functions (Transformations)

State the transformations on the following functions.

1. $y = -(x + 3)^2 - 4$

RO X (Reflection over X-axis)
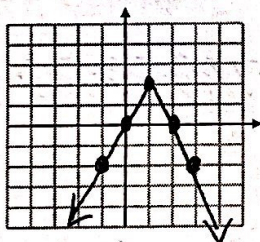Left 3
Down 4

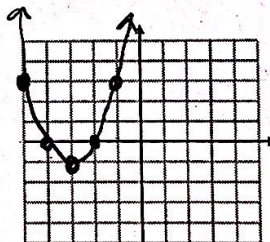2. $y = 3|x - 1| + 5$

Stretch (3)
Right 1
Up 5

Graph the following functions using transformations. (4 pts each)

3. $y = -2|x - 1| + 2$

4. $y = (x + 3)^2 - 1$

5. Given the parent function $y = x^3$, write the equation of the function with the following transformations:

Reflection across the x-axis
Vertical Stretch by 4
Horizontal Shift right 3
Vertical Shift up 7

$y = -4(x-3)^3 + 7$

LT #7: Absolute Value Functions & Graphs

Without graphing, identify the vertex, axis of symmetry, and transformations of the following absolute value function.

6. $y = \frac{1}{2}|x + 1| - 4$

Vertex: $(-1, -4)$
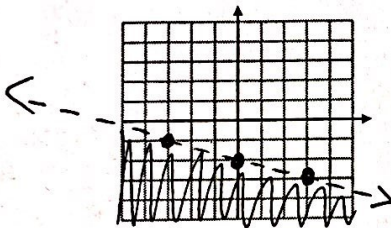AOS: $X = -1$
Transformations:

Compression ($\frac{1}{2}$)
left 1
Down 4
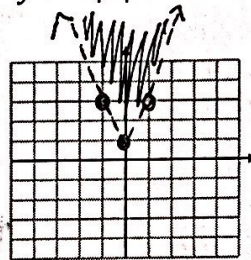
LT #8: Two-Variable Inequalities

Graph the inequality in the coordinate plane.
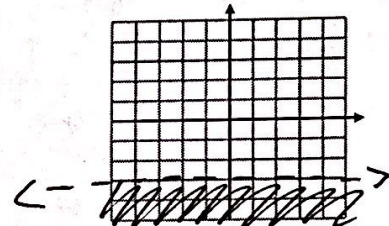
7. $y < -\frac{1}{3}x - 2$

8. $y > 2|x| + 1$

9. $y < -3$

LT #9: Dimensional Analysis

Convert the following using correct ratios. (2 pts each)
Round to nearest hundredth.

10. 8 weeks to seconds

$$8 \text{ weeks} \cdot \frac{7 \text{ days}}{1 \text{ week}} \cdot \frac{24 \text{ hrs}}{1 \text{ day}} \cdot \frac{60 \text{ min}}{1 \text{ hr}} \cdot \frac{60 \text{ sec}}{1 \text{ min}} = \boxed{4,838,400 \text{ sec}}$$

11. 25 ft/sec to miles/hour. (Given 1 mile ~ 5280 ft)

$$\frac{25 \text{ ft}}{\text{sec}} \cdot \frac{1 \text{ mile}}{5,280 \text{ ft}} \cdot \frac{60 \text{ sec}}{1 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hr}} = 17.05 \text{ mph}$$

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