

I. Complete the chart below using the appropriate notation(s).

	Inequality Notation	Interval Notation	Graph (on a number line)
1.)	$x \leq -2$	$(-\infty, -2]$	
2.)	$x \geq -1$	$[-1, \infty)$	
3.)	$0 < x \leq 4$	$(0, 4]$	
4.)	$-1 \leq x < 3$	$[-1, 3)$	
5.)	$x < -3$	$(-\infty, -3)$	
6.)	$x > 0$	$(0, \infty)$	
7.)	$x \leq 3$	$(-\infty, 3]$	
8.)	$x \leq -2$ or $x > 3$	$(-\infty, -2] \cup (3, \infty)$	
9.)	$1 < x \neq -1$	$(-\infty, -1) \cup (-1, \infty)$	
10.)	$x \geq 1$, but $x \neq 3$	$[1, 3) \cup (3, \infty)$	
11.)	$-2 \leq x \leq 4$, $x \neq 1$	$[-2, 1) \cup (1, 4]$	
12.)	IR, but $x \neq -2$, 0	$(-\infty, -2) \cup (-2, 0) \cup (0, \infty)$	
13.)	$x > -4$	$(-4, \infty)$	
14.)	$x < -2$ or $x \geq 4$	$(-\infty, -2) \cup [4, \infty)$	

II. State the domain and range of each given graph as an inequality and as an interval.

Problem # 15	Problem # 16	Problem # 17	Problem # 18
D/R – Using an Interval D: $(-\infty, \infty)$ R: $(-\infty, 4]$	D/R – Using an Interval D: $(-\infty, \infty)$ R: $[-4, 0]$	D/R – Using an Interval D: $(3, \infty)$ R: $[-4, \infty)$	D/R – Using an Interval D: $(2, \infty)$ R: $(-\infty, \infty)$

III. a.) Draw in the original parent graph in BLACK PEN and transformed in COLOR PEN.
b.) State the domain and range of the given function in interval notation.

<p>19.) Given: $y = (x-2)^2 - 4$ Transformations: <u>right 2, down 4</u></p> Domain (of given funct): $(-\infty, \infty)$ Range (of given funct): $[-4, \infty)$	<p>20.) Given: $y = \sqrt[3]{x+3} - 1$ Transformations: <u>left 3, down 1</u></p> Domain (of given funct): $(-\infty, \infty)$ Range (of given funct): $(-\infty, \infty)$	<p>21.) Given: $y = x+1 + 2$ Transformations: <u>left 1, up 2</u></p> Domain (of given funct): $(-\infty, \infty)$ Range (of given funct): $[2, \infty)$
<p>22.) Given: $y = \sqrt{x-1} + 3$ Transformations: <u>right 1, up 3</u></p> Domain (of given funct): $[1, \infty)$ Range (of given funct): $[3, \infty)$	<p>23.) Given: $y = (x+2)^3 + 1$ Transformations: <u>left 2, up 1</u></p> Domain (of given funct): $(-\infty, \infty)$ Range (of given funct): $(-\infty, \infty)$	<p>24.) Given: $y = \sqrt[3]{x-2} + 4$ Transformations: <u>right 2, up 4</u></p> Domain (of given funct): $(-\infty, \infty)$ Range (of given funct): $(-\infty, \infty)$
<p>25.) Given: $y = x-2 - 3$ Transformations: <u>right 2, down 3</u></p> Domain (of given funct): $(-\infty, \infty)$ Range (of given funct): $[-3, \infty)$	<p>26.) Given: $y = (x-4)^2 + 2$ Transformations: <u>right 4, up 2</u></p> Domain (of given funct): $(-\infty, \infty)$ Range (of given funct): $[2, \infty)$	<p>27.) Given: $y = \sqrt{x+3} - 4$ Transformations: <u>left 3, down 4</u></p> Domain (of given funct): $[-3, \infty)$ Range (of given funct): $[-4, \infty)$