

**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.)	$\mathbb{R}, x \neq -1$	$(-\infty, -1) \cup (-1, \infty)$	
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.)	$\mathbb{R}$ , 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.**

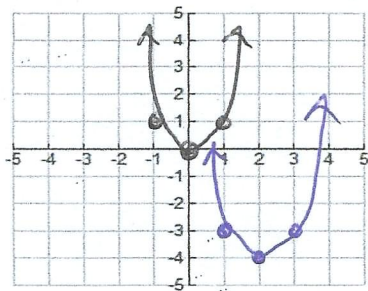
Problem # 15	Problem # 16	Problem # 17	Problem # 18
D/R – Using an Interval	D/R – Using an Interval	D/R – Using an Interval	D/R – Using an Interval
D: $(-\infty, \infty)$	D: $[-4, 4]$	D: $(-\infty, 3]$	D: $(-\infty, 2) \cup (2, \infty)$
R: $(-\infty, 4]$	R: $[-4, 4]$	R: $[-4, \infty)$	R: $(-\infty, 3)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



- 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.

19.) Given:  $y = (x - 2)^2 - 4$

Transformations: right 2 down 4

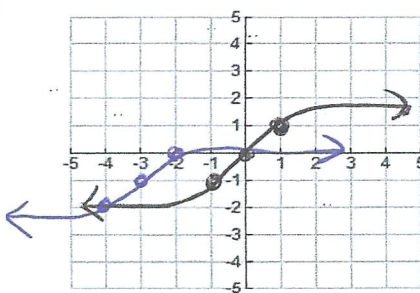


Domain (of given function):  $(-\infty, \infty)$

Range (of given function):  $[-4, \infty)$

20.) Given:  $y = \sqrt[3]{x+3} - 1$

Transformations: left +3 down 1

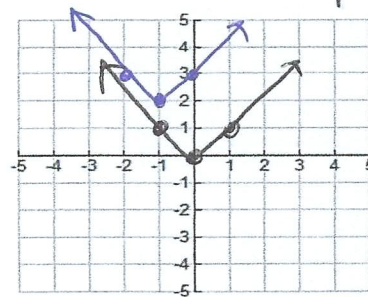


Domain (of given function):  $(-\infty, \infty)$

Range (of given function):  $(-\infty, \infty)$

21.) Given:  $y = |x + 1| + 2$

Transformations: left +1 up 2

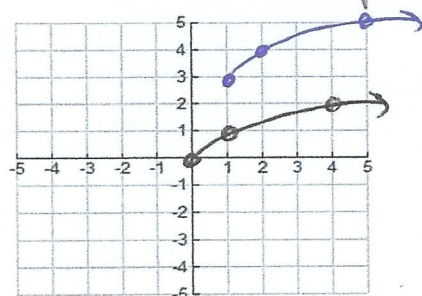


Domain (of given function):  $(-\infty, \infty)$

Range (of given function):  $[2, \infty)$

22.) Given:  $y = \sqrt{x-1} + 3$

Transformations: right +1 up 3

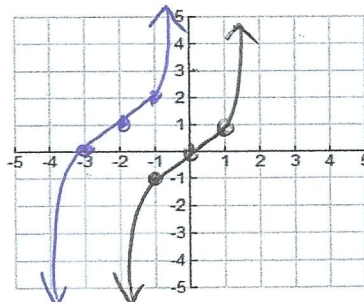


Domain (of given function):  $[1, \infty)$

Range (of given function):  $[3, \infty)$

23.) Given:  $y = (x + 2)^3 + 1$

Transformations: left +2 up 1

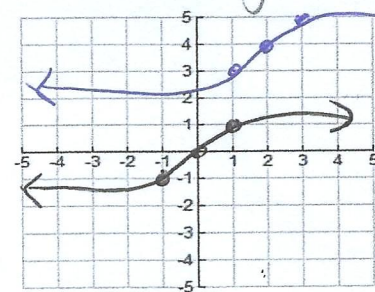


Domain (of given function):  $(-\infty, \infty)$

Range (of given function):  $(-\infty, \infty)$

24.) Given:  $y = \sqrt[3]{x-2} + 4$

Transformations: right +2 up 4

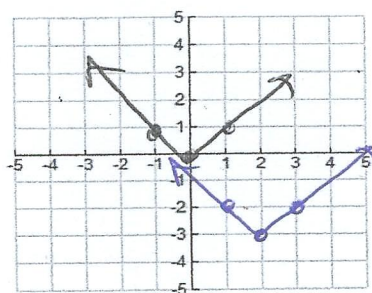


Domain (of given function):  $(-\infty, \infty)$

Range (of given function):  $(-\infty, \infty)$

25.) Given:  $y = |x - 2| - 3$

Transformations: right 2 down 3

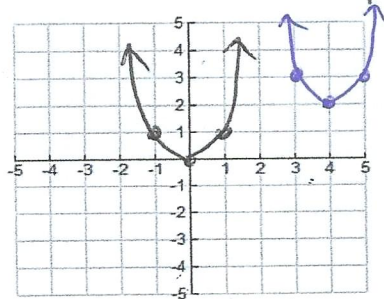


Domain (of given function):  $(-\infty, \infty)$

Range (of given function):  $[-3, \infty)$

26.) Given:  $y = (x - 4)^2 + 2$

Transformations: right 4 up 2

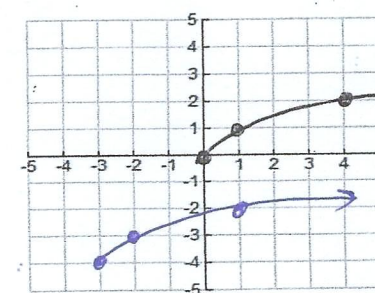


Domain (of given function):  $(-\infty, \infty)$

Range (of given function):  $[2, \infty)$

27.) Given:  $y = \sqrt{x+3} - 4$

Transformations: left +3 down 4



Domain (of given function):  $[-3, \infty)$

Range (of given function):  $[-4, \infty)$