Precalculus
Interval Notation

Name_____
Period_____

Bounded Intervals

Let a and b be real numbers such that $a < b$. The following intervals on the real number line are **bounded intervals.** The numbers a and b are the **endpoints** of each interval.

Interval Notation	Interval Type	Inequality	Graph
$[a,b]$	Closed	$a \le x \le b$	_____
(a,b)	Open	$a < x < b$	_____
$[a,b)$	Half-open	$a \le x < b$	_____
$(a,b]$	Half-open	$a < x \le b$	_____

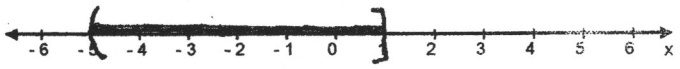
Unbounded Intervals

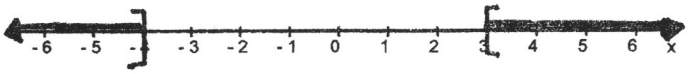
Let a and b be real numbers. The following intervals on the real number line are **unbounded intervals.**

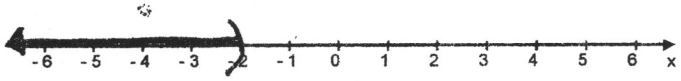
Interval Notation	Interval Type	Inequality	Graph
$[a,\infty)$	Half-open	$x \ge a$	_____
(a,∞)	Open	$x > a$	_____
$(-\infty,b]$	Half-open	$x \le b$	_____
$(-\infty,b)$	Open	$x < b$	_____
$(-\infty,\infty)$	Entire Real Line	All real numbers	_____

For each of the following graph write the **interval type** and write the set in **inequality** and **interval notation.**

Graph	Interval Type	Inequality Notation	Interval Notation

1. 

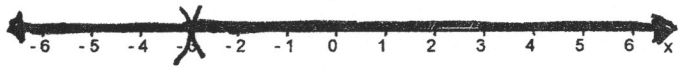
2. 

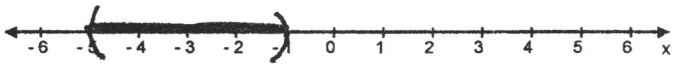
3. 

4. 

5. 

6. 

7. 

8. 

For each of the following set written in inequality notation, write the **interval type,** draw the **graph** on a number line and write it in **interval notation.**

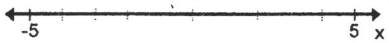
Inequality Notation	Interval Type	Graph	Interval Notation

9. $-5 < x < 2$

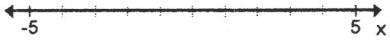
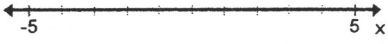
10. $0 \leq x < 4$

11. $x > 3$

12. $-1 \geq x \geq -2$

Inequality Notation	Interval Type	Graph	Interval Notation
13. $x < -1$ or $x \geq 1$			
14. $-4 \leq x < 5$			
15. $x > 2$ or $x < 2$			
16. $x \leq 0$			

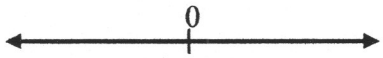
For each of the following sets written interval notation, write the **interval type**, write the set in **inequality notation** and draw the **graph** on a number line.

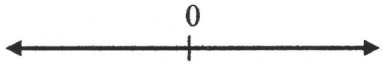
Interval Notation	Interval Type	Inequality Notation	Graph
17. $(3,5]$			
18. $(-\infty,-2]$			
19. $[-1,5]$			
20. $[0,\infty)$			
21. $(-\infty,-4]\cup(1,\infty)$			
22. $(-3,4)$			
23. $(-\infty,3)\cup(3,\infty)$			
24. $(2,\infty)$			

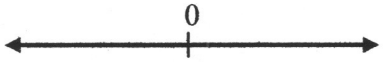
NAME:_____ **Practice: Interval Notation**

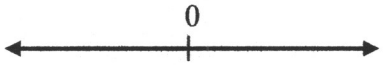
Put in interval notation AND draw a graph of each inequality.

1. $x \geq 4$  1._____

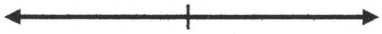
2. $x < 6$  2._____

3. $x \leq -2$  3._____

4. $x > 8$  4._____

5. $x < -10$  5._____

Write each interval as an inequality, and draw a graph for each.

6. $(-\infty, -8]$  6._____

7. $[5, \infty)$  7._____

8. $(-2, \infty)$  8._____

9. $[-10, \infty)$  9._____

10. $(-\infty, 6)$  10._____