

## Set and Interval Notation Worksheet

Directions: Write each of the following in set and interval notation.

INEQUALITIES	SET NOTATION	INTERVAL NOTATION
1. $x < -3$		
2. $x \leq 11$		
3. $x \leq -1$ or $x > 8$		
4. $-3 \leq x < 17$		
5. range: greater than 7		
7. domain: at most -6		
8. range: no more than 5		
9. domain: at least 45		
10. domain: between 7 and 23		
11. domain: All real numbers		
12. range: Not a whole number		
13. $-8 < x < 29$		
14. domain: Between -9 and 12 inclusive		
15. range: The empty set		
16. $3x - 5 > 17x - 1$		
17. $-12 < 4x - 8 \leq 12$		
18. $4x - 8 > -12$ and $5x - 1 \leq 9$		
19. $4(2x - 3) = -2(x - 1) + 10x$		
20. $3x - 9 \neq 7(3 - 2x) - 5$		

# ANSWERS

INEQUALITIES	SET NOTATION	INTERVAL NOTATION
1. $x < -3$	$\{x x < -3\}$	$(-\infty, -3)$
2. $x \leq 11$	$\{x x \leq 11\}$	$(-\infty, 11]$
3. $x \leq -1$ or $x > 8$	$\{x x \leq -1$ or $x > 8\}$	$(-\infty, -1] \cup (8, \infty)$
4. $-3 \leq x < 17$	$\{x -3 \leq x < 17\}$	$[-3, 17)$
5. greater than 7	$\{y y > 7\}$	$(7, \infty)$
7. at most -6	$\{x x \leq -6\}$	$(-\infty, -6]$
8. no more than 5	$\{y y \leq 5\}$	$(-\infty, 5]$
9. at least 45	$\{x x \geq 45\}$	$[45, \infty)$
10. between 7 and 23	$\{x 7 < x < 23\}$	$(7, 23)$
11. All real numbers	$\{x x \in R\}$	$(-\infty, \infty)$
12. Not a whole number	$\{y y \neq W\}$	Not possible
13. $-8 < x < 29$	$\{x -8 < x < 29\}$	$(-8, 29)$
14. Between -9 and 12 inclusive	$\{x -9 \leq x \leq 12\}$	$[-9, 12]$
15. The empty set	$\emptyset$	$\emptyset$
16. $3x - 5 > 17x - 1$	$\left\{x \mid x < -\frac{2}{7}\right\}$	$\left(-\infty, -\frac{2}{7}\right)$
17. $-12 < 4x - 8 \leq 12$	$\{x -1 < x \leq 5\}$	$(-1, 5]$
18. $4x - 8 > -12$ and $5x - 1 \leq 9$	$\{x -1 < x \leq 2\}$	$(-1, 2]$
19. $4(2x - 3) = -2(x - 1) + 10x$	$\emptyset$	$\emptyset$
20. $3x - 9 \neq 7(3 - 2x) - 5$	$\left\{x \mid x \neq \frac{25}{17}\right\}$	$\left(-\infty, \frac{25}{17}\right) \cup \left(\frac{25}{17}, \infty\right)$