1. Write the following as an inequality.

$-6$ is less than $x$, and

$9$ is greater than or equal to $x$

Use $x$ only once in your inequality.

2. Write the following as an inequality.

$0$ is less than or equal to $x$, and

$6$ is greater than or equal to $x$

Use $x$ only once in your inequality.

3. Graph the compound inequality on the number line.

$x \leq -5$ or $x > 8$
4. Graph the compound inequality on the number line.

\[ x > -4 \text{ and } x \leq 1 \]

5. Write a compound inequality for the graph shown below.
Use \( x \) for your variable.

6. Write a compound inequality for the graph shown below.
Use \( x \) for your variable.

7. The sets \( E \) and \( F \) are defined as follows.

\[ E = \{ x | x \leq 2 \} \]
\[ F = \{ x | x > 8 \} \]

Write \( E \cap F \) and \( E \cup F \) using interval notation.
If the set is empty, write \( \emptyset \).
8. The sets $D$ and $E$ are defined as follows.

$D = \{v \mid v < 3\}$

$E = \{v \mid v \leq 5\}$

Write $D \cup E$ and $D \cap E$ using interval notation.
If the set is empty, write $\emptyset$.

9. Solve the compound inequality.

$4x + 2 \geq -10$ and $3x - 4 < 8$

Graph the solution on the number line.

10. Solve the compound inequality.

$-12 \leq 4x + 4 < 16$

Graph the solution on the number line.
11. Solve the compound inequality.

\[ 4v - 3 < -23 \quad \text{and} \quad 2v + 2 \leq 14 \]

Write the solution in interval notation.
If there is no solution, enter \( \emptyset \).

12. Solve the compound inequality.

\[ 2w - 3 \leq 5 \quad \text{or} \quad 4w - 6 < -10 \]

Write the solution in interval notation.
If there is no solution, enter \( \emptyset \).
1. $-6 < x \leq 9$

2. $0 \leq x \leq 6$

3. [Graph showing the interval $-6 < x \leq 9$]

4. [Graph showing the interval $0 \leq x \leq 6$]

5. $-5 \leq x < 7$

6. $x < 0$ or $x \geq 2$

7. $E \cap F = \emptyset$

$E \cup F = (-\infty, 2] \cup (8, \infty)$

8. $D \cup E = (-\infty, 5]$

$D \cap E = (-\infty, 3)$
11. \((-\infty, -5)\)

12. \((-\infty, 4]\)