

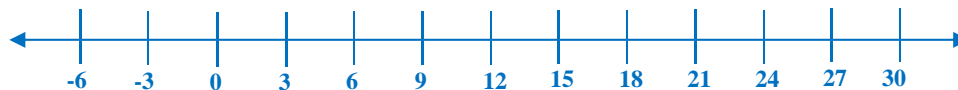
Compound Inequalities Assignment

Graph the solution set of each compound inequality.

1. $x \geq -2$ and $x \leq 2$



2. $x \leq 12$ or $x > 15$



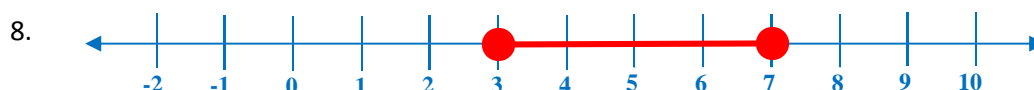
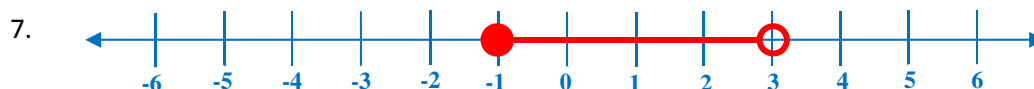
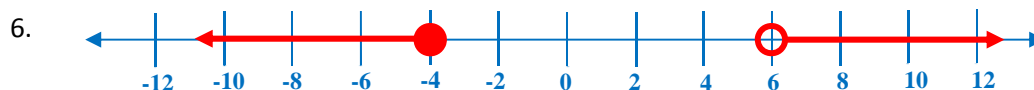
3. $-7 < x < -3$



4. $-7 \geq x$ or $x > -6$



Write a compound inequality for each graph.



Solve each compound inequality. Then graph the solution set.

9. $x - 6 > 1$ or $x - 6 \leq -3$



Compound Inequalities Assignment

10. $8 < 3x - 4 \leq 17$



11. $x + 9 \leq 4$ and $x + 3 \geq -4$



12. $x - 8 < -19$ or $x + 7 < 3$



Write and solve each inequality.

13. Two third of a number minus three is less than five or at least seven.

14. The sum of twice a number and four is between negative six and twelve.

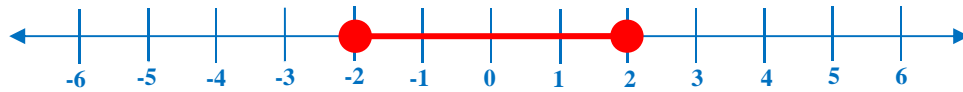
15. A typical human eye can see light within the 430 to 770 THz range. Write the compound inequality that describes the frequency at which of a typical human can see.

Compound Inequalities Assignment

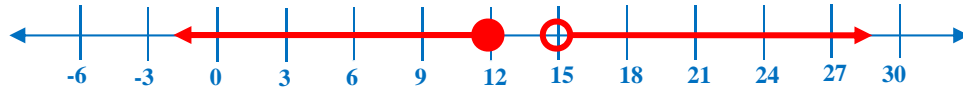
ANSWER

Graph the solution set of each compound inequality.

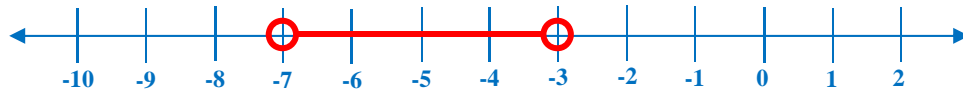
1. $x \geq -2$ and $x \leq 2$ $-2 \leq x \leq 2$



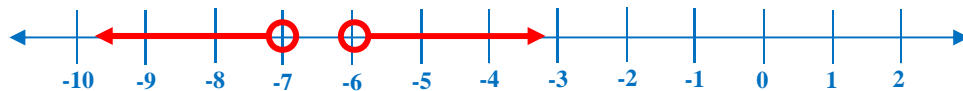
2. $x \leq 12$ or $x > 15$



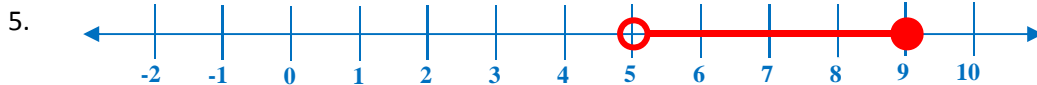
3. $-7 < x < -3$



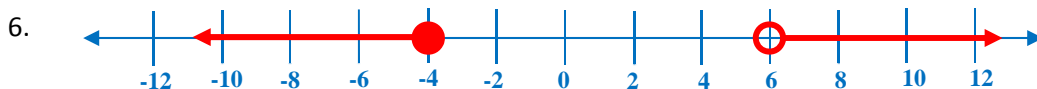
4. $-7 \geq x$ or $x > -6$ $x \leq -7$ or $x > -6$



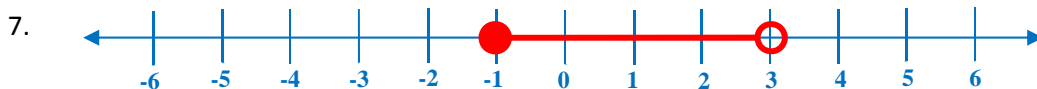
Write a compound inequality for each graph.



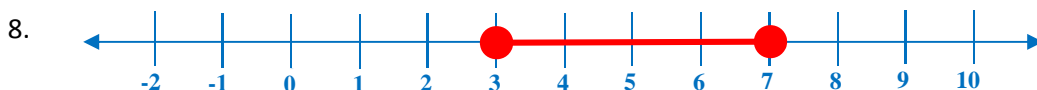
$5 < x \leq 9$



$x \leq -4$ or $x > 6$



$-1 \leq x < 3$



$3 \leq x \leq 7$

Solve each compound inequality. Then graph the solution set.

9. $x - 6 > 1$ or $x - 6 \leq -3$ $x \leq 3$ or $x > 7$

$x - 6 > 1$

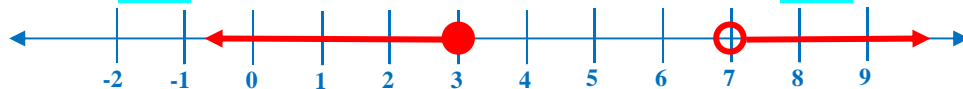
$x - 6 + 6 > 1 + 6$

$x > 7$

$x - 6 \leq -3$

$x - 6 + 6 \leq -3 + 6$

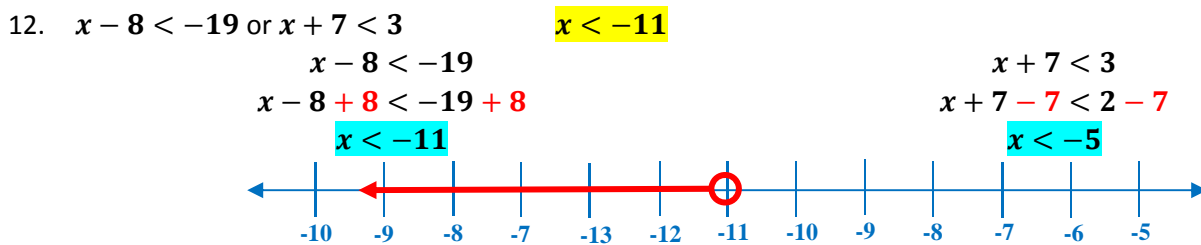
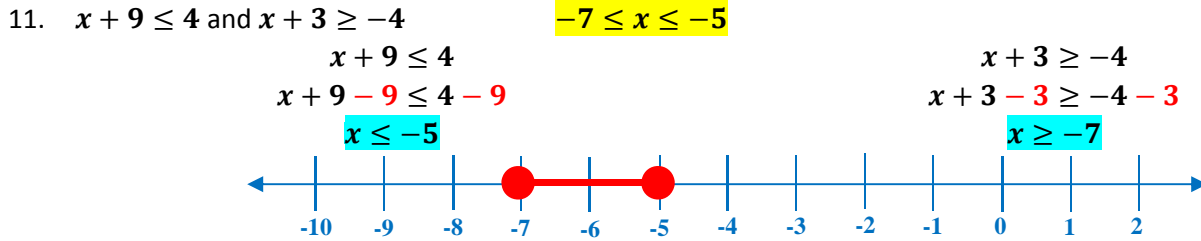
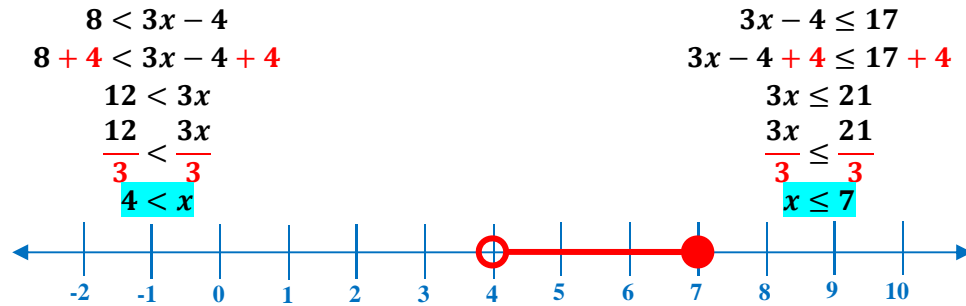
$x \leq 3$



10. $8 < 3x - 4 \leq 17$

$4 < x \leq 7$

Compound Inequalities Assignment



Write and solve each inequality.

13. Two third of a number minus three is less than five or at least seven.

$$\begin{array}{lcl}
 \frac{2}{3}x - 3 < 5 & & \frac{2}{3}x - 3 \geq 7 \\
 \frac{2}{3}x - 3 + 3 < 5 + 3 & & \frac{2}{3}x - 3 + 3 \geq 7 + 3 \\
 \frac{2}{3}x < 8 & & \frac{2}{3}x \geq 10 \\
 \left(\frac{3}{2}\right)\left(\frac{2}{3}x\right) < 8\left(\frac{3}{2}\right) & & \left(\frac{3}{2}\right)\left(\frac{2}{3}x\right) \geq 10\left(\frac{3}{2}\right) \\
 x < 12 & & x \geq 15 \\
 \text{or} & &
 \end{array}$$

$x < 12$ or $x \geq 15$

14. The sum of twice a number and four is between negative six and twelve.

$$\begin{array}{lcl}
 -6 < 2x + 4 & & 2x + 4 < 12 \\
 -6 - 4 < 2x + 4 - 4 & & 2x + 4 - 4 < 12 - 4 \\
 -10 < 2x & & 2x < 8 \\
 \frac{-10}{2} < \frac{2x}{2} & & \frac{2x}{2} < \frac{8}{2} \\
 -5 < x & & x < 4 \\
 \text{or} & &
 \end{array}$$

$-5 < x < 4$

Name: _____ Period: _____ Date: _____

Compound Inequalities Assignment

15. A typical human eye can see light within the 430 to 770 THz range. Write the compound inequality that describes the frequency at which of a typical human can see.

$$430 \text{ THz} \leq x \leq 770 \text{ THz}$$