

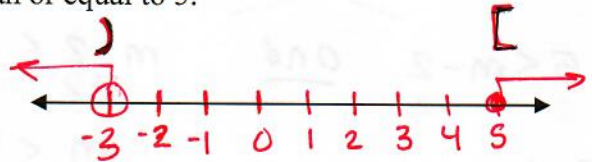
ALGEBRA 1
3-6 PRACTICE WORKSHEET

Name KEY
Date _____

For each statement, write a compound inequality and graph the solution.

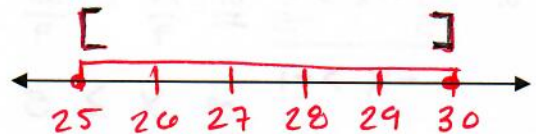
1. All real numbers that are less than -3 or greater than or equal to 5.

$$x < -3 \text{ or } x \geq 5$$



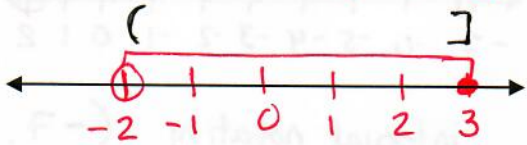
2. A certain recipe calls for a cake to bake between 25 and 30 minutes inclusive. (includes endpoints)

$$25 \leq x \leq 30$$

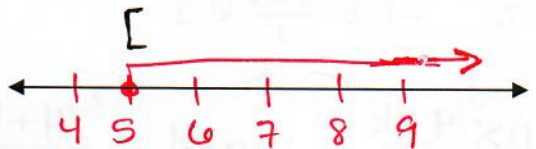


Using "x" as the variable, write each interval as a compound inequality. Then graph the interval.

3. $(-2, 3]$ $-2 < x \leq 3$



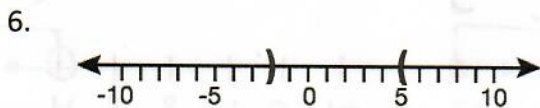
4. $[5, \infty)$ $5 \leq x < \infty$



Write the compound inequality and interval notation represented by each graph.



$$-2 < x < 3 \quad (-2, 3)$$



$$x < -2 \text{ or } x > 5$$

$$(-\infty, -2) \cup (5, \infty)$$



$$x \leq -1 \text{ or } x \geq 1$$

$$(-\infty, -1] \cup [1, \infty)$$



$$-8 < x \leq 5$$

$$(-8, 5]$$

Solve each compound inequality, and write the solution in interval notation. Then graph the solution. Be sure to state "and" or "or" in the solution.

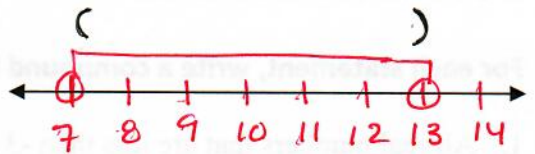
5. $5 < m - 2 < 11$

$$\begin{array}{r} 5 < m - 2 & \text{and} & m - 2 < 11 \\ + 2 & & + 2 & + 2 \end{array}$$

$$7 < m$$

$$m > 7$$

$$m < 13$$

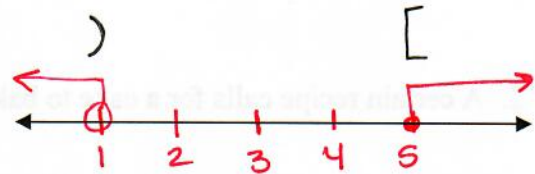


interval notation: $(7, 13)$

6. $\frac{5 - x}{-5} > \frac{4}{-5}$ or $\frac{7x}{7} \geq \frac{35}{7}$

$$\frac{-x}{-1} > \frac{-1}{-1} \text{ or } x \geq 5$$

FLIP $x < 1$



$(-\infty, 1) \cup [5, \infty)$

7. $-1 < \frac{4+k}{3} < 2$

$$\begin{array}{r} (-1) < \left(\frac{4+k}{3}\right) & \text{and} & \left(\frac{4+k}{3}\right) < (2) \\ \times 3 & & \times 3 \end{array}$$

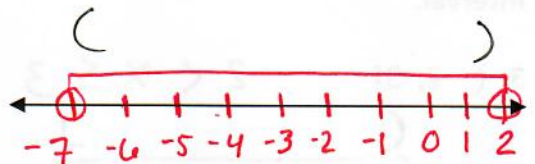
$$\frac{-3 < 4 + k}{-4 \quad -4}$$

$$-7 < k$$

$$k > -7$$

$$\frac{4 + k < 6}{-4 \quad -4}$$

$$k < 2$$



interval notation $(-7, 2)$

8. $5 - \frac{2}{3}n \geq 7$ or $\frac{1}{4}n - 4 \geq -3$

$$\begin{array}{r} 5 - \frac{2}{3}n \geq 7 \\ -5 \quad -5 \end{array}$$

$$-\frac{3}{2}\left(-\frac{2}{3}n\right) \geq -\frac{3}{2}(2)$$

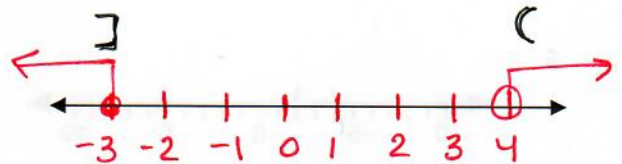
FLIP $n \leq -3$

$$\text{or } \frac{1}{4}n - 4 \geq -3$$

$$\frac{+4 \quad +4}{+4 \quad +4}$$

$$\frac{1}{4}n \geq 1$$

$$n \geq 4$$



$(-\infty, -3] \cup (4, \infty)$