

KEY

Algebra

Chapter 4 Snake Review

1.

Which numbers are solutions of the inequality $x > -5.2$

8 -11 -6 -5.2 0

2.

Solve the inequality and graph its solution.

$$\frac{x}{-8} < -10 \cdot -8$$

$x > 80$

A number line graph showing the solution set $x > 80$. The number line has tick marks at 0 and 80. An open circle is drawn at 80, and an arrow points to the right from this circle, indicating that all values greater than 80 are solutions.

3.

Solve the inequality and graph its solution.

$$-32 \geq 8 + 5n$$

$\frac{-40}{5} \geq \frac{5n}{5}$

$-8 \geq n$

A number line graph showing the solution set $n \leq -8$. The number line has tick marks at -8 and 0. A closed circle is drawn at -8, and an arrow points to the left from this circle, indicating that all values less than or equal to -8 are solutions.

4.

Solve the inequality.

$$\begin{aligned}
 & -4x + 9 < 6x - 13 \\
 & \xrightarrow{+4x} \quad \xrightarrow{+4x} \\
 & \hline
 & 9 < 10x - 13 \\
 & \xrightarrow{+13} \quad \xrightarrow{+13} \\
 & \hline
 & 22 < 10x \\
 & \xrightarrow{\div 10} \quad \xrightarrow{\div 10} \\
 & 2.2 < x \\
 & \longleftarrow \quad \text{---} \quad \longrightarrow \\
 & \quad \quad \quad | \quad \oplus \\
 & \quad \quad \quad 0 \quad 2.2
 \end{aligned}$$

6.


Replace the with the number that makes the inequalities equivalent.

$$\begin{aligned}
 & \frac{-3a}{-3} < \frac{\text{■}}{-3} \\
 & a > -5
 \end{aligned}$$

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5.

Solve the inequality.

$$\begin{aligned}
 & 8x - 3(2x + 6) \geq 8 \\
 & \xrightarrow{\text{Distribute}} \\
 & 8x - 6x - 18 \geq 8 \\
 & \xrightarrow{+18} \quad \xrightarrow{+18} \\
 & 2x \geq 26 \\
 & \xrightarrow{\div 2} \quad \xrightarrow{\div 2} \\
 & x \geq 13
 \end{aligned}$$


7.

Translate to an inequality for each.

a. The van holds at most 7 people.

$$V \leq 7$$

b. Mary needs to work at least 7 hours today.

$$M \geq 7$$

c. Mary earns more than \$7 per hour.

$$M > 7$$

8.

Write an inequality and solve.

A canoe rental company charges \$25.00 to rent the canoe and \$11.00 per day. Becky has at most \$110 to spend on the canoe. Write and solve an inequality that shows how many days she can rent the canoe. Show work for credit. $d = \text{days}$

$$\begin{aligned}
 25 + 11d &\leq 110 \\
 -25 &\quad -25 \\
 \hline
 11d &\leq 85 \\
 d &\leq 7.73 \text{ days} \\
 &\text{d} \leq 7 \text{ days}
 \end{aligned}$$

10.

Write a compound inequality for each.

a. all real numbers less than 4 and greater than 0 $0 < x < 4$

b. all real numbers greater than or equal to 22 or less than 19 $x < 19$ or $x \geq 22$

c. all real numbers that are at least -3 and no more than 0 $-3 \leq x \leq 0$

9.

$$-8 \leq x \leq 4$$



$$x \leq 6 \text{ or } x \geq 11$$

11.

Solve the inequality and graph the solution.



$$\begin{aligned}
 -2 \leq 3a - 8 < 4 \\
 +8 &\quad +8 \quad +8 \\
 \hline
 \frac{6}{3} \leq \frac{3a}{3} < \frac{12}{3} \\
 2 \leq a < 4
 \end{aligned}$$

12.

Solve the inequality and graph the solution.

$$|-5x - 5| > 25$$

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$$\begin{array}{r} \cancel{-5x - 5} < \cancel{-25} \\ \hline +5 \quad +5 \end{array} \qquad \begin{array}{r} \cancel{-5x - 5} > 25 \\ \hline +5 \quad +5 \end{array}$$
$$\begin{array}{r} \cancel{-5x} < \cancel{-20} \\ \hline \cancel{-5} \quad \cancel{-5} \end{array} \qquad \begin{array}{r} \cancel{-5x} > 30 \\ \hline \cancel{-5} \quad \cancel{-5} \end{array}$$
$$x > 4 \qquad x < -6$$

