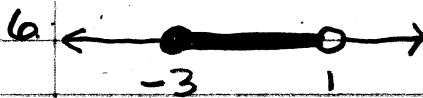
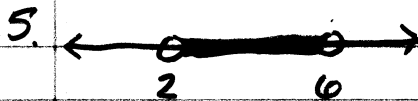
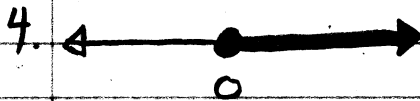
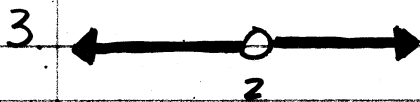
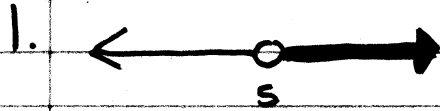


Inequalities Homework Answers



7.
$$\begin{array}{ccc} 3x - 1 < 14 \\ +1 & & +1 \end{array}$$

$$\begin{array}{ccc} 3x < 15 \\ \frac{3}{3} & & \frac{3}{3} \end{array}$$

$$\boxed{x < 5}$$

8.
$$\begin{array}{ccc} 5 - 2x > -3 \\ -5 & & -5 \end{array}$$

$$\begin{array}{ccc} -2x > -8 \\ \frac{-2}{-2} & & \frac{-8}{-2} \end{array}$$

$$\boxed{x < 4}$$

$$9. \frac{x}{-4} \leq 2x$$

$$-4 \cdot \frac{x}{-4} \leq 2x \cdot -4$$

$$\begin{array}{rcl} x & \geq & -8x \\ +8x & & +8x \end{array}$$

$$\frac{9x}{9} \geq \frac{0}{9}$$

$$\boxed{x \geq 0}$$

$$10. \begin{array}{rcl} 4x + 6 & > & 5x - 7 \\ -4x & & -4x \end{array}$$

$$\begin{array}{rcl} 6 & > & x - 7 \\ +7 & & +7 \end{array}$$

$$\boxed{13 > x}$$

$$11. -2(x+3) \leq 5(x-8)$$

$$\begin{array}{rcl} -2x - 6 & \leq & 5x - 40 \\ +2x & & +2x \end{array}$$

$$\begin{array}{rcl} -6 & \leq & 7x - 40 \\ +40 & & +40 \end{array}$$

$$\begin{array}{rcl} 34 & \leq & 7x \\ \div 7 & & \div 7 \end{array}$$

$$\boxed{\frac{34}{7} \leq x}$$

$$12. \quad 4 + \frac{x}{3} > 2x - 7$$

$$3\left(4 + \frac{x}{3}\right) > 3(2x - 7)$$

$$\underset{-x}{12 + x} > \underset{-x}{6x - 21}$$

$$\underset{+21}{12} > \underset{+21}{5x - 21}$$

$$\frac{33}{5} > \frac{5x}{5}$$

$$\boxed{\frac{33}{5} > x}$$

$$13. \quad \underset{+4}{-6} < \underset{+4}{2x - 4}$$

$$\underset{+4}{2x - 4} < \underset{+4}{10}$$

$$\frac{-2}{2} < \frac{2x}{2}$$

$$\frac{2x}{2} < \frac{14}{2}$$

$$-1 < x$$

$$x < 7$$

$$\boxed{-1 < x < 7}$$

$$14. \quad 11 \leq 3 - x$$

$$\begin{array}{r} -3 \quad -3 \\ \hline 8 \leq -x \end{array}$$

$$\frac{8}{-1} \frac{\leq}{-1} \frac{-x}{-1}$$

$$8 \geq x$$

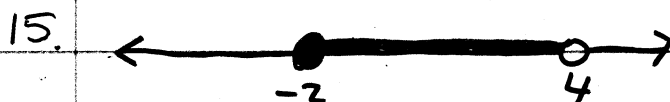
$$3 - x < 4$$

$$\begin{array}{r} -3 \quad -3 \\ \hline -x < 1 \end{array}$$

$$\frac{-x}{-1} < \frac{1}{-1}$$

$$x > -1$$

$$\boxed{-1 < x \leq 8}$$



16. $\emptyset$

$$17. \quad 7x + 2 < -5$$

$$\begin{array}{r} -2 \quad -2 \\ \hline 7x < -7 \end{array}$$

$$\frac{7x}{7} < \frac{-7}{7}$$

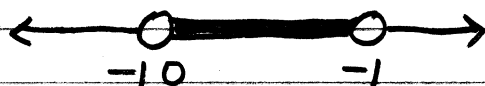
$$x < -1$$

$$-2x - 8 < 12$$

$$\begin{array}{r} +8 \quad +8 \\ \hline -2x < 20 \end{array}$$

$$\frac{-2x}{-2} < \frac{20}{-2}$$

$$x > -10$$



$$18. \quad 4x - 5 < 2x + 3$$

$$\begin{array}{r} -2x \quad -2x \\ \hline 2x - 5 < 3 \end{array}$$

$$\frac{2x - 5}{+5} < \frac{3}{+5}$$

$$\frac{2x}{2} < \frac{8}{2}$$

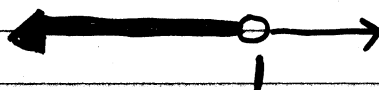
$$x < 4$$

$$10 + 2x < x + 11$$

$$\begin{array}{r} -x \quad -x \\ \hline 10 + x < 11 \end{array}$$

$$\frac{10 + x}{-10} < \frac{11}{-10}$$

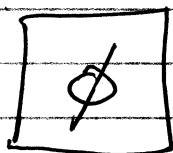
$$x < 1$$



$$19. \quad 5x + 1 < 3$$

$$\frac{5x}{5} < \frac{2}{5}$$

$$x < \frac{2}{5}$$



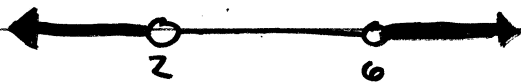
$$9 + 4x \geq x + 15$$

$$\frac{9}{-9} + \frac{3x}{-9} \geq \frac{15}{-9}$$

$$\frac{3x}{3} \geq \frac{6}{3}$$

$$x \geq 2$$

20.



21.

← All real numbers →

$$22. \quad 3 - 2x > -3$$

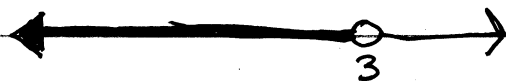
$$\frac{-2x}{-2} > \frac{-6}{-2}$$

$$x < 3$$

$$3x + 6 < 9$$

$$\frac{3x}{3} < \frac{3}{3}$$

$$x < 1$$



23.

$$4x - 5 > x + 1$$

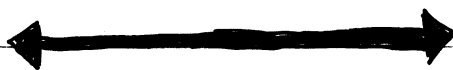
$$\frac{3x - 5}{+5} > \frac{1}{+5}$$

$$\frac{3x}{3} > \frac{6}{3}$$

$$x > 2$$

$$x - 7 < -3$$

$$x < 4$$



All real numbers

$$24. \quad \begin{array}{r} 7x > 2x + 15 \\ -2x \quad -2x \end{array}$$

$$\begin{array}{r} 2x > 5x - 12 \\ -2x \quad -2x \end{array}$$

$$\begin{array}{r} 5x > 15 \\ \underline{5} \quad \underline{5} \end{array}$$

$$\begin{array}{r} 0 > 3x - 12 \\ +12 \quad +12 \end{array}$$

$$x > 3$$

$$\begin{array}{r} 12 > 3x \\ \underline{3} \quad \underline{3} \end{array}$$



All real numbers

$$4 > x$$