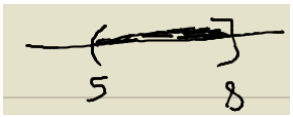
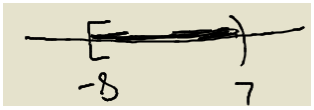
Homework: Linear Inequalities for One Variable - Key

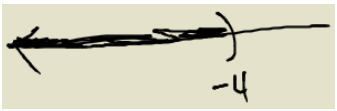
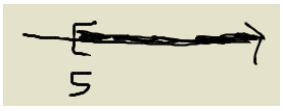
In Problems 1-4, write each inequality using interval notation. Graph the inequality

1. $[-3,8]$ 	2. $(5,8]$ 
3. $(-\infty,-3)$ 	4. $[9,\infty)$ 

In Problems 5-8, write each interval as an inequality involving x. Graph each inequality

5. $x \geq 2$ 	6. $3 < x < 8$ 
7. $x < 5$ 	8. $-8 \leq x < 7$ 

In Problems 9-22, solve each linear inequality. Write the solution using set-builder notation and interval notation. Graph the solution set

9. $x < -4$ $\{x \mid x < -4\}$ $(-\infty,-4)$ 	10. $x \geq 5$ $\{x \mid x \geq 5\}$ $[5,\infty)$ 

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11.

$x \geq -4$

$\{x \mid x \geq -4\}$

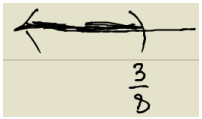
$[-4, \infty)$

12.

$x < \frac{3}{8}$

$\left\{x \mid x < \frac{3}{8}\right\}$

$\left(-\infty, \frac{3}{8}\right)$

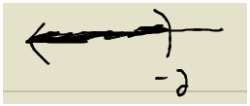


13.

$x < -2$

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

$(-\infty, -2)$

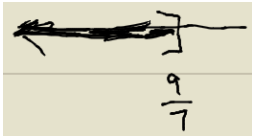


14.

$x \leq \frac{9}{7}$

$\left\{x \mid x \leq \frac{9}{7}\right\}$

$\left(-\infty, \frac{9}{7}\right]$

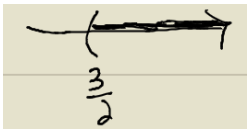


15.

$x > \frac{3}{2}$

$\left\{x \mid x > \frac{3}{2}\right\}$

$\left(\frac{3}{2}, \infty\right)$

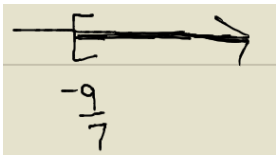


16.

$x \geq \frac{-9}{7}$

$\left\{x \mid x \geq \frac{-9}{7}\right\}$

$\left[\frac{-9}{7}, \infty\right)$



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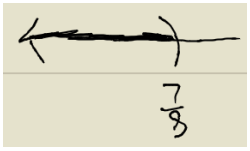
17.

$x < \frac{7}{8}$

$\left\{x \mid x < \frac{7}{8}\right\}$

$\left(-\infty, \frac{7}{8}\right)$

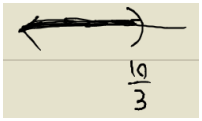


18.

$x < \frac{10}{3}$

$\left\{x \mid x < \frac{10}{3}\right\}$

$\left(-\infty, \frac{10}{3}\right)$

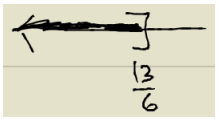


19.

$x \leq \frac{13}{6}$

$\left\{x \mid x \leq \frac{13}{6}\right\}$

$\left(-\infty, \frac{13}{6}\right]$

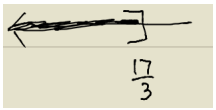


20.

$x \leq \frac{17}{3}$

$\left\{x \mid x \leq \frac{17}{3}\right\}$

$\left(-\infty, \frac{17}{3}\right]$

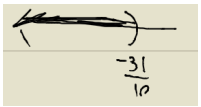


21.

$x < \frac{-31}{10}$

$\left\{x \mid x < \frac{-31}{10}\right\}$

$\left(-\infty, \frac{-31}{10}\right)$



22.

$x \leq \frac{-1}{12}$

$\left\{x \mid x \leq \frac{-1}{12}\right\}$

$\left(-\infty, \frac{-1}{12}\right]$