Mrs. Moore
Algebra 1E

Name: Key
Solving One-Step Inequalities

CLASSWORK (DUE AT THE END OF THE PERIOD)

Try it! Write and graph an inequality.

1. The lowest elevation recorded in the United States is -282 feet at Death Valley, California. Use this fact to write and graph an inequality that described the elevations in the United States.

Write inequalities from graphs.

2. 

3. 

Solve an inequality using addition.

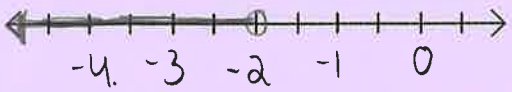
4. $x - 9 \leq 3$
$+9 \quad +9$
$x \leq 12$

5. $-5 \geq x - 8$
$+8 \quad +8$
$3 \geq x$ $\quad x \leq 3$

Solve an inequality using ~~addition~~ sub.

6. $y + 5 < 3$
$-5 \quad -5$
$y < -2$

7. $-4 \leq x + 3$
$-3 \quad -3$
$-7 \leq x \rightarrow x \geq -7$



8. **Solve a real-world problem.** You are shopping for bicycles. The type you want costs at least $185. You have saved $97. Find the possible amounts of money you need to save to buy the bicycle you want.

$97 + x \geq 185$
$-97 \quad -97$
$x \geq 88$

$88 or less

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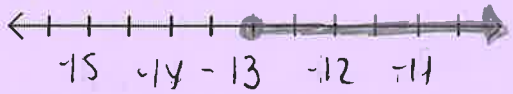
Solving One-Step Inequalities

Solve and graph the inequalities. REMEMBER: Flip the sign if you multiply or divide by a negative #

9. $x + 8 \geq -5$

$-8 \quad -8$

$x \geq -13$



10. $y + 6 < 14$

$-6 \quad -6$

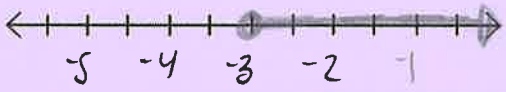
$y < 8$

11. $-8 \leq v - 5$

$+5 \quad +5$

$-3 \leq v$

$v \geq -3$



12. $w - 11 > 2$

$+11 \quad +11$

$w > 13$

13. $\frac{-40}{-5} < \frac{-5r}{-5}$

$8 > r$

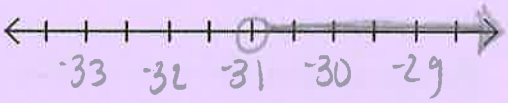
$r < 8$

* flip b/c ÷ by (-)

14. $\frac{-93}{3} < \frac{3s}{3}$

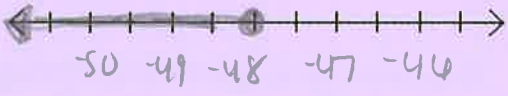
$-31 < s$

$s > -31$



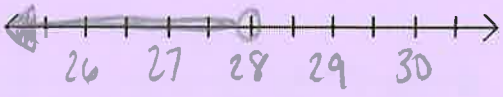
15. $\frac{c}{6} \leq -8$ · 6

$c \leq -48$



16. $\frac{n}{-4} > -7$ · -4

$n < 28$



17. You need to make at least 150 sandwiches for a charity event. You can make 3 sandwiches per minute. How long will it take you to make the number of sandwiches you need? Write and solve an inequality to solve.

$\frac{3x}{3} \geq \frac{150}{3}$

$x \geq 50$

At least 50 minutes

Mrs. Moore/Mrs. Hinds
Algebra 1

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Solving Two-Step and Multi-Step Inequalities

Solve and graph the following inequalities. Be sure to show all of your work.

1. $3x - 2 > 7$

$+2 \quad +2$

$\frac{3x}{3} > \frac{9}{3}$

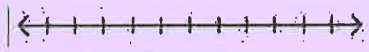
$x > 3$

2. $\frac{x}{2} + 3 < -6$

$-3 \quad -3$

$2 \cdot \frac{x}{2} < -9 \cdot 2$

$x < -18$



3. $\frac{2}{5}(5x - 10) \geq -2$

$2x - 4 \geq -2$

$+4 \quad +4$

$\frac{2x}{2} \geq \frac{2}{2}$

$x \geq 1$

4. $5 \leq -3x + 11$

$-11 \quad -11$

$\frac{-6}{-3} \leq \frac{-3x}{-3}$

$2 \geq x$ * flip blc ÷ by (-)

$x \leq 2$

5. $-4y + 5 \geq -11$

$-5 \quad -5$

$\frac{-4y}{-4} \geq \frac{-16}{-4}$

$y \leq 4$ * flip blc ÷ by (-)

6. $\frac{5}{3}x - 3 > 7$

$+3 \quad +3$

$\frac{3}{5} \cdot \frac{5}{3}x > 10 \cdot \frac{3}{5}$

$x > 6$

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7. $4 \geq 2x + 8$

$-8 \quad -8$

$\frac{-4}{2} \geq \frac{2x}{2}$

$-2 \geq x$

$x \leq -2$

8. $-2(3s-1) \leq 14$

$-6s + 2 \leq 14$

$-2 \quad -2$

$\frac{-6s}{-6} \leq \frac{12}{-6}$

$s \geq -2$

* flip b/c ÷ by (−)

9. $2(-2x+3) - 4 \leq 6$

$-4x + 6 - 4 \leq 6$

$-4x + 2 \leq 6$

$+2 \quad -2$

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

$x \geq -1$

* flip b/c ÷ by (−)

11. $3 < 3(5x+1) - 6x - 6$

$3 < 15x + 3 - 6x - 6$

$3 < 9x - 3$

$+3 \quad +3$

$\frac{6}{9} < \frac{9x}{9}$

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

10. $\left(\frac{4}{3} - \frac{5}{6}x \geq \frac{3}{4}\right)$ 12

$16 - 10x \geq 9$

$-16 \quad -16$

$\frac{-10x}{-10} \geq \frac{-7}{-10}$

$x \leq 7/10$

12. $\left(\frac{1}{6}x + \frac{4}{9} < \frac{3}{2}\right)$ 18

$3x + 8 < 27$

$-8 \quad -8$

$\frac{3x}{3} < \frac{19}{3}$

$x < \frac{19}{3}$