

Inequality Review Algebra 2011**Short Answer**

1. Tina can type at least 60 words per minute. Write and graph an inequality to model this situation.

Solve the inequality.

2. $\frac{1}{5} + \frac{1}{3}x > \frac{1}{2}x - \frac{1}{4}$
3. $\frac{3}{10} \geq k - \frac{3}{5}$
4. $12 + 10w \geq 8(w + 12)$
5. $-2x - 3x + 11 > 4x - (11 - 9x)$
6. $k + 18 - 2(k - 20) > 0$
7. Suppose you had d dollars in your bank account. You spent \$22 but have at least \$28 left. How much money did you have initially? Write and solve an inequality that represents this situation.

Solve the compound inequality. Graph your solution.

8. $\frac{2x-1}{3} + 3 \leq -4$ or $\frac{8x-2}{2} - 1 \geq 6$
9. $7x - 15 < -15$ or $2x + 4 > 12$

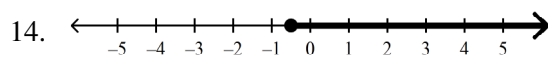
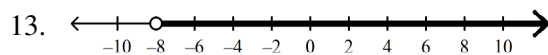
Solve the equation. If there is no solution, write *no solution*.

10. $4\left|x + \frac{1}{3}\right| = 20$
11. $2|n| - 12 = 16$

Graph the inequality.

12. $x \leq 5$

Write an inequality for the graph.



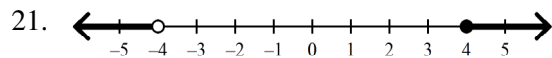
Solve the inequality. Then graph your solution.

15. $x - 1 \leq -9$
16. $-13 < 3x - 10 < 20$
17. $|2x + 9| < 25$
18. $-\frac{x}{2} \leq 4$

Write a compound inequality that represents each situation. Graph your solution.

19. all real numbers that are greater than -3 but less than 3
20. all real numbers at least -3 and at most 2

Write a compound inequality that the graph could represent.



22. Write four solutions to the inequality $1 > \frac{x}{3}$.

Write and solve an inequality.

23. The result of 6 subtracted from a number n is at least 2. What numbers are solutions?
24. An airline requires carry-on luggage to weigh at most 40 pounds. Your suitcase currently weighs 10 pounds. How many pounds p are available for you to fill your suitcase with other items?

Write an inequality to describe the situation.

25. A van can hold a maximum of 8 passengers. Let p represent the number of passengers.

Other

26. Are the solutions of the compound inequality $x < 2$ OR $x > 5$ different from the solutions to the compound inequality $x < 2$ AND $x > 5$? Explain.
27. Explain why the equation $6|x| + 22 = 4$ has no solution.
28. A student solved $ab \leq c$ for a as shown below. Is the student correct? Explain.

$$\begin{aligned} ab &\leq c \\ \frac{ab}{b} &\leq \frac{c}{b} \\ a &\leq \frac{c}{b} \end{aligned}$$