

Review: Solving Inequalities

Solve & graph

① $3x - 1 \geq 6$

② $5 - 3x > 17$

③ $5 - x \geq 7$

④ $\frac{1}{3}x < -3$

⑤ $2(3x - 1) > 5(x - 2)$

⑥ $3 - 2(x + 1) < 2(x + 1) + 3x$

Solve each.

⑦ $|x - 1| < 4$

⑧ $|3 - 2x| > 5$

⑨ $|\frac{1}{2}x - 1| = 3$

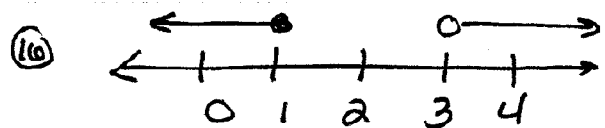
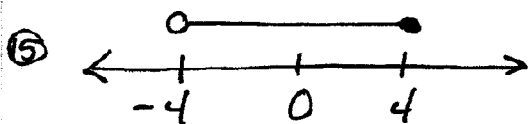
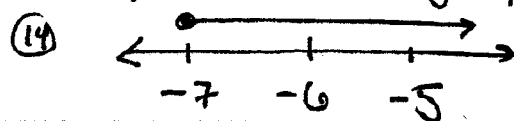
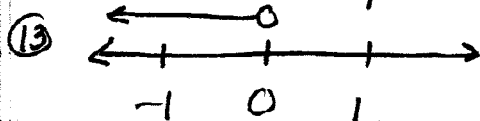
⑩ $5|x + 1| - 4 = 6$

Solve & check.

⑪ $|5x + 1| = 4x$

⑫ $|6x - 2| = 4x - 4$

Write the inequality that corresponds to the graph.

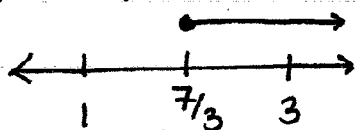


Define a variable. Write an inequality. Solve.

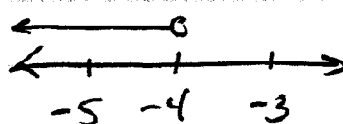
- ⑦ your car averages 28 miles per gallon in the city. the actual mileage varies from the average by at most 4 miles per gallon. write an absolute value inequality that shows the range of the mileage for your car. Solve the inequality to find the range in gas mileage.

Answers:

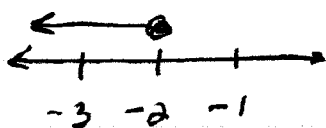
1) $x \geq 7/3$



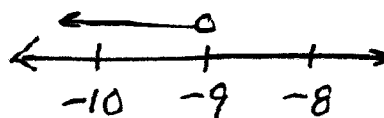
2) $x < -4$



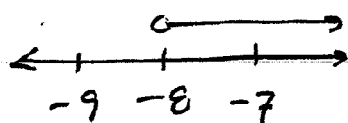
3) $x \leq -2$



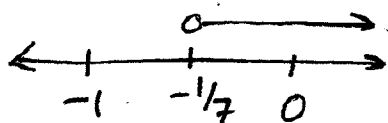
4) $x < -9$



5) $x > -8$



6) $x > -1/7$



7) $-3 < x < 5$

8) $x < -1$ OR $x > 4$

9) $x = -4, 8$

10) $x = -3, 1$



11) $\emptyset$ (neither $x = -1$ OR $x = -\frac{1}{9}$ checks out)

12) $\emptyset$ (neither $x = -1$ OR $x = \frac{3}{5}$ checks out)

13) $x < 0$

14) $x \geq -7$

15) $-4 < x \leq 4$

16) $x \leq 1$ OR $x > 3$

17) let $x =$ actual gas mileage

$$|x - 28| \leq 4$$

solution: $24 \leq x \leq 32$

* car averages between 24 & 32 miles per gallon