

Solving Inequalities: PRACTICE

1. Solve the following inequalities using addition, subtraction, multiplication, and division:

a. $x + 8 \leq 36$ b. $\frac{x}{3} \leq 18$ c. $4x > -26$

d. $-3x < -8$

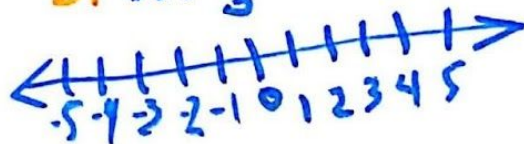
e. $-x \geq 9$

f. $x - 6 < 36$

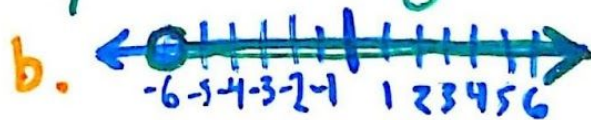
2. Graph these inequalities:

a. $x \leq 9$

b. $x > \frac{8}{3}$



3. Write the inequality from the graph:



Solving Inequalities: Practice cont.

4. Solutions of Inequalities:

a. is -2 a solution of $3x+1 < -5$?

b. is 5 a solution of $-2x+3 > -3$?

c. what are 2 solutions of $-5x+3 < -9$?

5. Write a set for the multiples of 2:

Roster Form:

Set Builder Form:

6. List all subsets of $\{2, 4, 6\}$

7. Show your understanding of interval notation: write the following in interval notation form:

a. $x \leq 3$

b. $x > 2$

c. $x \geq 8$

Solving Inequalities: Practice

8. Solve the compound Inequalities:

a. $6 \leq x+3 \leq 9$ b. $-8 \leq 2x-3 < 10$

c. $-3+x > 2$ OR $-3+x < -4$ d. $3x > 18$ OR $4x \leq 8$

Solving Inequalities: Answers

1. a. $x \leq 28$
 b. $r \leq 54$
 c. $x > -6$
 d. $x > \frac{2}{3}$
 e. $x < 9$
 f. $x < 42$
8. a. $3 \leq x \leq 6$
 b. $-\frac{5}{2} \leq x < \frac{3}{2}$
 c. $x > 5$ OR $x < -1$
 d. $x > 6$ OR $x \leq 2$



3. a. $x \geq 3$
 b. $x > -6$

4. a. no
 b. no
 c. $-3, -4$

5. RE: $\{2, 4, 6, 8, \dots\}$
 SET: $\{x \mid x \text{ is a multiple of } 2\}$

6. $\{0\}$ $\{2\}$ $\{4\}$ $\{6\}$
 $\{2, 4\}$ $\{2, 6\}$ $\{4, 6\}$ $\{2, 4, 6\}$

7. a. $(-\infty, 3]$
 b. $(2, \infty)$
 c. $[8, \infty)$