

Lesson 19 Practice Problems

1. Here is an inequality: $\frac{7x + 6}{2} \leq 3x + 2$

Select **all** of the values that are a solution to the inequality.

A. $x = -3$

B. $x = -2$

C. $x = -1$

D. $x = 0$

E. $x = 1$

F. $x = 2$

G. $x = 3$

2. Find the solution set to this inequality: $2x - 3 > \frac{2x - 5}{2}$

A. $x < \frac{1}{2}$

B. $x > \frac{1}{2}$

C. $x \leq \frac{1}{2}$

D. $x \geq \frac{1}{2}$

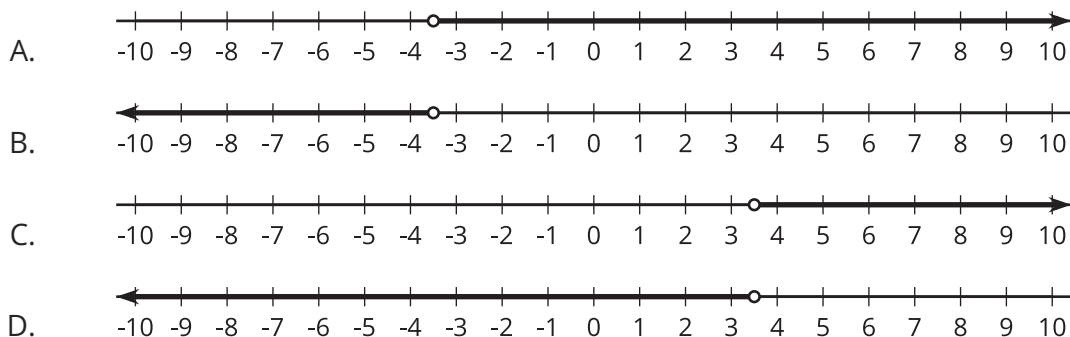
3. Here is an inequality: $\frac{-10 + x}{4} + 5 \geq \frac{7x - 5}{3}$

What value of x will produce equality (or make the two sides equal)?

4. Noah is solving the inequality $7x + 5 > 2x + 35$. First, he solves the equation $7x + 5 = 2x + 35$ and gets $x = 6$.

How does the solution to the equation $7x + 5 = 2x + 35$ help Noah solve the inequality $7x + 5 > 2x + 35$? Explain your reasoning.

5. Which graph represents the solution to $5 + 8x < 3(2x + 4)$?



6. Solve this system of linear equations without graphing: $\begin{cases} 7x + 11y = -2 \\ 7x + 3y = 30 \end{cases}$

(From Unit 2, Lesson 15.)

7. Kiran has 27 nickels and quarters in his pocket, worth a total of \$2.75.

a. Write a system of equations to represent the relationships between the number of nickels n , the number of quarters q , and the dollar amount in this situation.

b. How many nickels and quarters are in Kiran's pocket? Show your reasoning.

(From Unit 2, Lesson 12.)

8. How many solutions does this system of equations have? Explain how you know.

$$\begin{cases} y + \frac{2}{3}x = 4 \\ 2x = 12 - 3y \end{cases}$$

(From Unit 2, Lesson 17.)

9. The principal of a school is hosting a small luncheon for her staff. She plans to prepare two sandwiches for each person. Some staff members offer to bring salads and beverages.

The principal has a budget of \$225 and expects at least 16 people to attend. Sandwiches cost \$3 each.

Select **all** of the equations and inequalities that could represent the constraints in the situation, where n is number of people attending and s is number of sandwiches.

- A. $n \geq 16$
- B. $n \geq 32$
- C. $s < 2n$
- D. $s = 2n$
- E. $3n \leq 225$
- F. $3s \leq 225$

(From Unit 2, Lesson 18.)

10. Students at the college are allowed to work on campus no more than 20 hours per week. The jobs that are available pay different rates, starting from \$8.75 an hour. Students can earn a maximum of \$320 per week.

Write at least two inequalities that could represent the constraints in this situation. Be sure to specify what your variables represent.

(From Unit 2, Lesson 18.)