

Lesson 6 Practice Problems

1. 28 students travel on a field trip. They bring a van that can seat 12 students. Elena and Kiran's teacher asks other adults to drive cars that seat 3 children each to transport the rest of the students.

Elena wonders if she should use the inequality $12 + 3n > 28$ or $12 + 3n \geq 28$ to figure out how many cars are needed. Kiran doesn't think it matters in this case. Do you agree with Kiran? Explain your reasoning.

2. a. In the cafeteria, there is one large 10-seat table and many smaller 4-seat tables. There are enough tables to fit 200 students. Write an inequality whose solution is the possible number of 4-seat tables in the cafeteria.

- b. 5 barrels catch rainwater in the schoolyard. Four barrels are the same size, and the fifth barrel holds 10 liters of water. Combined, the 5 barrels can hold at least 200 liters of water. Write an inequality whose solution is the possible size of each of the 4 barrels.

- c. How are these two problems similar? How are they different?

3. Priya looks at the inequality $12 - x > 5$ and says “I subtract a number from 12 and want a result that is bigger than 5. That means that the solutions should be values of x that are smaller than something.”

Do you agree with Priya? Explain your reasoning and include solutions to the inequality in your explanation.

4. When a store had sold $\frac{2}{5}$ of the shirts that were on display, they brought out another 30 from the stockroom. The store likes to keep at least 150 shirts on display. The manager wrote the inequality $\frac{3}{5}x + 30 \geq 150$ to describe the situation.

a. Explain what $\frac{3}{5}$ means in the inequality.

b. Solve the inequality.

c. Explain what the solution means in the situation.

5. Select **all** the inequalities that have the same graph as $x < 4$.

A. $x < 2$

B. $x + 6 < 10$

C. $5x < 20$

D. $x - 2 > 2$

E. $x < 8$

(From Unit 4, Lesson 3.)