

# Lesson 25: Representing Systems of Inequalities

- Let's find and represent solutions to situations involving inequalities.

## 25.1: Which One Doesn't Belong: Splash Zone!



Which one doesn't belong?

A: Clare's family wants to

- spend at least 4 hours at the amusement park
- spend more time in the Splash Zone than riding rides

B: Jada's family wants to

- be at the amusement park from 4 p.m. to 8 p.m.
- spend most of their time riding rides

C: Priya's family wants to

- spend 2 hours at Splash Zone
- spend 2 hours riding rides

D: Diego's family wants to

- spend no more than 6 hours at the amusement park
- spend at least twice as long riding rides as they spend at Splash Zone

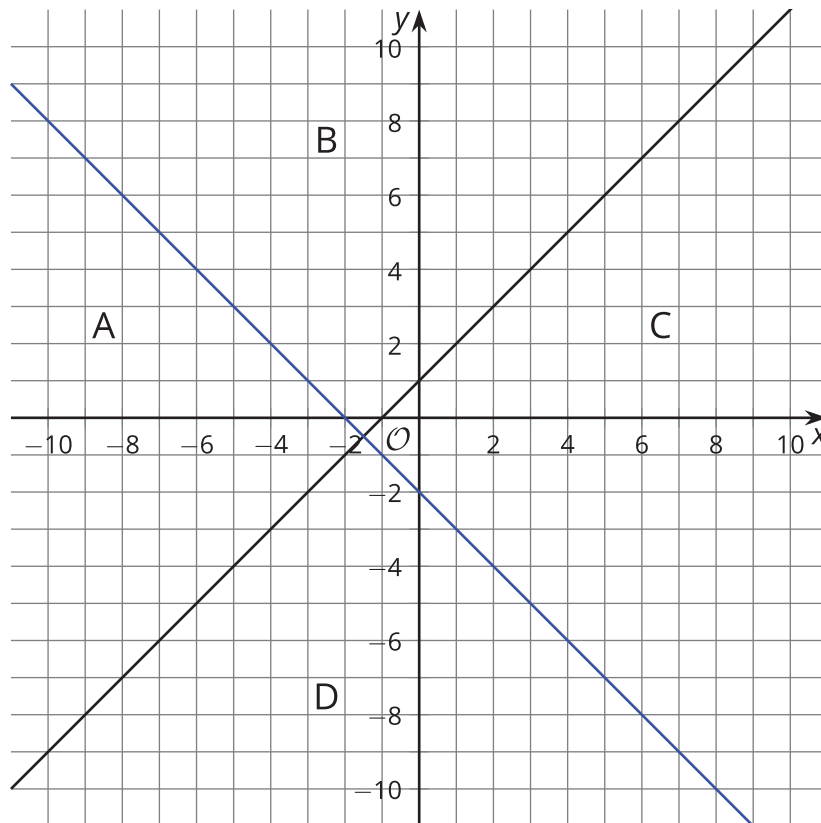
## 25.2: Amusing Solutions

For each family, let  $x$  be the amount of time each family spends riding rides, and  $y$  be the amount of time each family spends at the Splash Zone.

List one or more ordered pairs  $(x, y)$  that would fit the constraints. If you can only list one, explain why you can only list one.

1. Clare's family wants to spend at least 4 hours at the amusement park, and they want to spend more time in the Splash Zone than riding rides.
2. Jada's family wants to be at the amusement park from 4 p.m. to 8 p.m., and they want to spend most of their time riding rides.
3. Priya's family wants to spend 2 hours at Splash Zone and 2 hours riding rides.
4. Diego's family wants to spend no more than 6 hours at the amusement park, and they want to spend at least twice as long riding rides as they spend at Splash Zone.

## 25.3: Which Section?



- The graph shows the lines  $y = x + 1$  and  $y = -x - 2$ . Which line represents  $y = x + 1$ ?
- For each of the 4 regions, write a coordinate pair for a point in that region.
- Change the equations represented by the lines into inequalities so that the region labeled as A is shaded by both inequalities.
  - $y$  \_\_\_\_\_  $x + 1$
  - $y$  \_\_\_\_\_  $-x - 2$
- Use the coordinate pairs you chose for region A to check your inequalities.