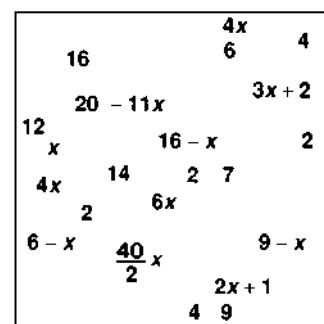


## Divide and Conquer

## Problem-of-the-Week

### The Problems

- A.** George and Raphael work at a kennel. One day they are told to move gates into a  $20\text{ ft} \times 20\text{ ft}$  pen so that 9 dogs can be separated. The dogs must also stay as far apart from each other as possible (see diagram). When they check their supplies, they find four gate sections 10 feet long and four other fence sections that are a little more than 14 feet long. If they are not allowed to bend or cut the gates, and if some dogs can have more space than others, how can they fence in the dogs if they decide to build square fences?
- B.** If  $x = 2$ , evaluate the expressions and then draw four straight lines to separate the square area into 11 smaller areas such that the sum of the expressions in each area is 14.



### Strategies and Hints

#### Problem A

1. Be sure to keep the dogs in their approximate positions.
2. Think about how squares could be drawn inside the total area.
3. Try to solve the problem ignoring the given lengths.

#### Problem B

1. Find ways to divide a plane into 11 parts using three straight lines.
2. Think about the location of lines in relationship to the value of the algebraic expressions.