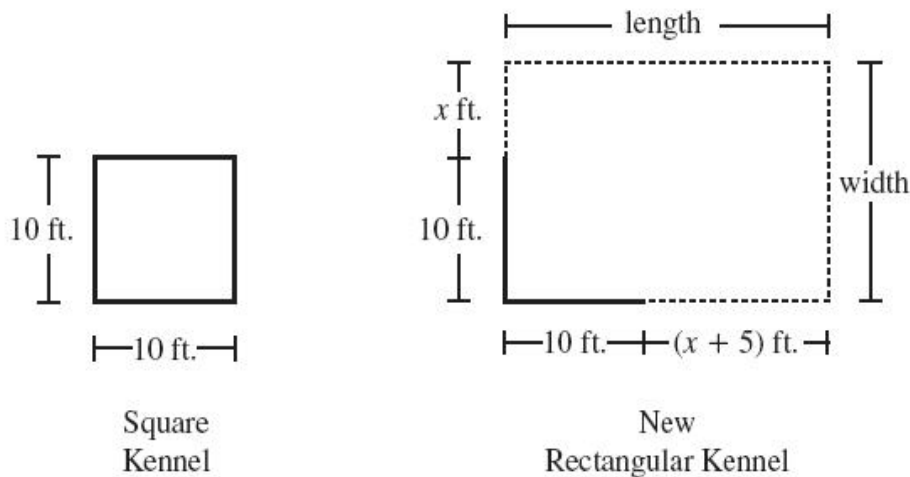


Mario keeps his dog in a kennel shaped like a square with 10-foot sides. He wants to increase the area of the square kennel by removing two sides of the square and adding fencing to make a new rectangular kennel. The dimensions of the square kennel and the new rectangular kennel are shown in the diagrams below.



- Write an expression in terms of x to represent the width, in feet, of the new rectangular kennel.
- Write an expression in terms of x to represent the length, in feet, of the new rectangular kennel.
- Use the expressions you wrote in part (a) and part (b) to write an equation for A , the area, in square feet, of the new rectangular kennel.
- Mario wants the new rectangular kennel to have an area of 300 square feet. If the value of A is 300 in the equation you wrote in part (c), what values of x will make the equation true? Show or explain how you got each of your answers.
- If the value of A is 300 in the equation you wrote in part (c), what should be the width and length, in feet, of Mario's new rectangular kennel? Show or explain how you got each of your answers.