Read each situation. Define your variable(s). Write an equation. Solve the equation. Check answer against the domain. Write answer in a sentence.
Sometimes, you will need to graph the equation on your calculator to find the answers.

1. The height of a plastic rectangular prism storage container is 4 inches shorter than the width. The length is 7 inches longer than the width. The volume of the storage container is 5304 cubic inches. What are the dimensions of the container?

2.   A box is to be made from a piece of cardboard measuring 24 inches by 24 inches by cutting identical squares from the corners and turning up the sides. What are the lengths of the sides of the removed squares if the area of the bottom of the open box is 196 in^2?

3. Ms. Peterson can paint her basement in 8 hours. Brady can paint the basement in 10 hours. Working together, how long will it take them to finish the room?

4. Britton can refinish the floor in 9 hours. Britton and Jason can refinish the floor together in 4 hours. How long would it take Jason to finish the floors himself?

5. The length of a rectangle is five more than twice the width. If the area is at least 75 square centimeters, what are the possible values for the width?