Extraneous Solutions
*ExtraneousSolns.tns*

Name _____

Class _____

Problem 1 – Solving a radical equation

Page 1.3 shows step 1 of the solution to the equation $\sqrt{x+11}+1=x$. Your task is to solve the equation in each step graphically on the using the *Graph* application provided on page 1.3. Simply enter the expression on the left-hand side of the equation into the text box defining **f1(x)** and the expression on the right-hand side into the text box defining **f2(x)**.

Click the arrow and repeat the same process for each step of the equation and record the solution(s)—the point(s) of intersection—on the appropriate lines below.
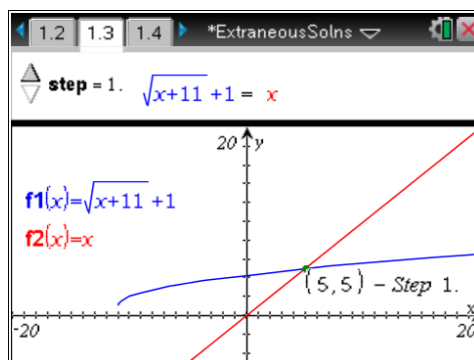
Step 1: $x =$ _____

Step 2: $x =$ _____   Step 5: $x =$ _____

Step 3: $x =$ _____   Step 6: $x =$ _____

Step 4: $x =$ _____   Step 7: $x =$ _____

When you are finished, reset functions **f1** and **f2** as they were in Step 1, and on page 1.4, check your solution(s) in the function table and algebraically.

- Do all of your solutions make the original equation true? Explain your answer.

- In which step do you find the extraneous solution? Why do you think it appeared in that particular step?