**5.4 Solving Rational Equations**

**Example 1:** Solve the rational equation. $0= \frac{x-1}{x+5}$

 **You try:** Solve the rational equation. $ 2= \frac{x-2}{x+1}$

**Example 2:** Solve the rational equation.$ \frac{x+2}{x-5}= \frac{x-1}{x+3}$

**You try:** Solve the rational equation. $ \frac{x+4}{2x+1}= \frac{x-2}{x+1}$

**Example 3:** Salt water is flowing into a large tank that contains pure water. The concentration of salt, c, in the tank at t minutes is given by $c\left(t\right)= \frac{10t}{25+t}$ , where c is measured in grams per liter. When does the salt concentration in the tank reach 3.75g/L?

**Example 4:** Nasra bought a case of concert t-shirts for $500. She kept 3 t-shirts for herself and sold the rest for $620, making a profit of $10 on each t-shirt. How many shirts were in the case?

What should we let the variable x represent?

**Example 5:** When they work together, Victor and Adam can mow the school field's lawn in 65 minutes. When Adam works alone, he can finish the lawn in 5 minutes less time than Victor can when he works alone. When Victor works alone, how long does he take to mow the lawn?