**How Many Solutions?**

A linear equation can have one solution, no solution, or an infinite number of solutions. Solve each multi-step equation and identify the number of solutions.

1. 4*x* + 5 ­– *x =* 10 + 3*x* + 4 2. *x* + 8 = 15 + 4*x* – 7

3. 6*x* – 3*x* + 9 = 2 + 8*x* 4. 10 – *x* – 6 = 9*x +* 4 – 10*x*

5. *x* + *x* + 3 = –3 + 2*x +*6 6. 7 – 2*x* – 3*x* = 10 ­– 5*x*

1. In solving a multi-step equation, a student ended up with 0*x* = 4. She decided to divide both sides of the equation by 0 and got *x* = 0. How would you convince her that she has made a mistake?
2. What values of *x* satisfy the equation 0*x* = 0? Explain your reasoning.