Here are a set of problems for my Algebra notes. These problems do not have any solutions available on this site. These are intended mostly for instructors who might want a set of problems to assign for turning in. I try to put up both practice problems (with solutions available) and these problems at the same time so that both will be available to anyone who wishes to use them.
Solutions and Solution Sets

For each of the following determine if the given number is a solution to the given equation or inequality.

1. Is \( u = -1 \) a solution to \( 4u^2 - 40 = 10(2u - 1) - 6 \) ?

2. Is \( t = 7 \) a solution to \( 7(t + 2) = 5(t + 4) + 2 \) ?

3. Is \( z = -\frac{1}{3} \) a solution to \( 6(z - 1) + 5 = 9z \) ?

4. Is \( x = -6 \) a solution to \( x^2 = -10x - 24 \) ?

5. Is \( t = \frac{1}{4} \) a solution to \( 3t^2 + 8t = 3(1 - t) \) ?

6. Is \( w = -3 \) a solution to \( 2w^2 - 10 = w^2 - 7w + 8 \) ?

7. Is \( x = \frac{1}{2} \) a solution to \( \frac{3}{x} - \frac{1}{x^2} = 2 \) ?

8. Is \( v = -2 \) a solution to \( \frac{v^2 + v - 2}{v - 1} = 0 \) ?

9. Is \( v = 1 \) a solution to \( \frac{v^2 + v - 2}{v - 1} = 0 \) ?

10. Is \( x = -1 \) a solution to \( \frac{3x + 1}{x^2} - \frac{6}{x + 2} = \frac{x - 7}{3x + 4} \) ?

11. Is \( y = 4 \) a solution to \( 4y^2 - y^3 \leq 5y + 2 \) ?

12. Is \( w = 0 \) a solution to \( 3(w - 7) + 2(w + 1) > 10w \) ?

13. Is \( x = 7 \) a solution to \( 3 + 4x < x + 24 \) ?