Homework 5

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1. even(0).
   even(s(s(x))) ← even(x).
   odd(s(0)).
   odd(s(s(x))) ← odd(x).

   * if 0 is even then 2 ahead is even
   * if 1 is odd then 2 ahead is odd

2. integer_quo(X, Y, Z) means X/Y = Z
   greater_than(X, Y) means X > Y

   integer_quo(X, Y, 0) ← greater_than(Y, X).
   integer_quo(X, Y, s(Z)) ← plus(Y, A, Z), integer_quo(A, Y, Z).

   * base case of Y > X meaning it won't return an int
   * (subtraction)

3. adjacent(X, Y, [X, Y | Zs]).
   adjacent(X, Y, [Z | Zs]) ← adjacent(X, Y, Zs).

   last(X, [X]).
   last(X, [Y | Ys]) ← last(X, Ys).

   * either in head together or in list
   * all left in list

4. double([], []).
   double([X | Xs], [X, X | Ys]) ← double(Xs, Ys).

   * end if they're empty
   * recurse double without last X; X, X to find next matching elements