Assignment # 6

due Wednesday, April 23, 2014

1. Write all the integer numbers between 0 and 12, inclusive, resulting from the sieve:

\[ \overline{3}_0 \cap (4_1 U 4_3) U 4_0 \]

follow the step-by-step procedure and write the integer numbers between brackets:

\[
\begin{align*}
\overline{3}_0 &= \{ \} \\
3_0 &= \{ \} \\
4_1 &= \{ \} \\
4_3 &= \{ \} \\
4_1 U 4_3 &= \{ \} \\
\overline{3}_0 \cap (4_1 U 4_3) &= \{ \} \\
4_0 &= \{ \} \\
\overline{3}_0 \cap (4_1 U 4_3) U 4_0 &= \{ \}
\end{align*}
\]

Reminder: \(3_0\) means all numbers that have a remnant of 0 when divided by 3; \(\overline{3}_0\) means all numbers that are NOT \(3_0\); \(\cap\) means intersection: numbers common to both sides of the symbol; \(U\) means union: all numbers belonging either to one or to the other side of the symbol.

2. Number the sounds of one octave starting with C\(_4\) as 0, ending with C\(_5\) as 12 then write the pitches corresponding to the numbers resulting from the sieve:

3. Number the sixteenths starting with 0 at the beginning of a \(\frac{3}{4}\) bar and write the rhythm corresponding to the numbers resulting from the sieve (if the number 0 is not present, use a rest instead:

EXTRA CREDIT:

a. what element(s) of the sieve produce the symmetry in the pitch scale and the nonretrogradable rhythm?