Name: _____ CWID: _____

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Math Question of the Week

Week 2 Solutions

Please complete the problem and show your work on THIS paper. You may submit your solution by Friday 9/9 at 5 pm in the MATH OFFICE (BIN 306)

Sixty quarters are initially lined up side by side. Every second quarter is replaced by a dime, then every third coin is replaced by a nickel, and finally, every fourth coin is replaced by a penny. What is the value of the final arrangement of coins?

Solution:

Since the least common multiple of 2, 3, and 4 is 12, coins 1-2, 13-24, 25-36, 37-48, and 49-60 will produce a similar pattern. See the following tables for the process.

Sixty quarters are initially lined up side by side.

Coin #	1	2	3	4	5	6	7	8	9	10	11	12
Coin	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q

Every second quarter is replaced by a dime:

Coin #	1	2	3	4	5	6	7	8	9	10	11	12
Coin	Q	D	Q	D	Q	D	Q	D	Q	D	Q	D

Every third coin is replaced by a nickel

Coin #	1	2	3	4	5	6	7	8	9	10	11	12
Coin	Q	D	N	D	Q	N	Q	D	N	D	Q	N

Every fourth coin is replaced by a penny

Coin #	1	2	3	4	5	6	7	8	9	10	11	12
Coin	Q	D	N	P	Q	N	Q	P	N	D	Q	P

The total value of coins 1- 12 is $1.38, so the value of 60 coins would be $1.38 x 5 = $6.90