

## Worksheet #1 McNugget Numbers

The McDonald's near my house sells Chicken McNuggets in three sizes:

- 6 piece box
- 9 piece box
- 20 piece box

Sometimes I want to buy other numbers of McNuggets, and I can do so by purchasing multiple boxes; for example, if I want 32 McNuggets, then since  $32 = 6 + 6 + 20$ , I could buy two 6 piece boxes and one 20 piece box to get 32 McNuggets.

Let's call a number a *McNugget number* if it is possible to buy that number of McNuggets by combining boxes of the three sizes above.

**Question 1:** Do you think every number is a McNugget number? Why or why not? Can you name some number that are McNugget numbers? Can you name some numbers that are not McNugget numbers?

**Question 2:** If six numbers in a row are McNugget numbers, then all numbers larger than that are McNugget numbers. Why is this true?

**Exercise:** Start going through all the numbers to determine if they are McNugget numbers. You can stop once you get to six McNugget numbers in a row.

*(If a number is a McNugget number, explain how to obtain it; for example, 32 is a McNugget number, so we write  $32 = 6 + 6 + 20$ . If a number is not a McNugget number, put an X. For example,  $3 = X$ .)*

1 =	21 =	41 =
2 =	22 =	42 =
3 =	23 =	43 =
4 =	24 =	44 =
5 =	25 =	45 =
6 =	26 =	46 =
7 =	27 =	47 =
8 =	28 =	48 =
9 =	29 =	49 =
10 =	30 =	50 =
11 =	31 =	51 =
12 =	32 =	52 =
13 =	33 =	53 =
14 =	34 =	54 =
15 =	35 =	55 =
16 =	36 =	56 =
17 =	37 =	57 =
18 =	38 =	58 =
19 =	39 =	59 =
20 =	40 =	60 =