Problem of the Week

Problem E

Coin Combinations

In Canada, a \$2 coin is called a toonie, a \$1 coin is called a loonie, and a 25¢ coin is called a quarter. Four quarters have a value of \$1.

How many different combinations of toonies, loonies, and/or quarters have a total value of \$100?

NOTE: In solving this problem, it may be helpful to use the fact that the sum of the first n positive integers is equal to $\frac{n(n+1)}{2}$. That is,

$$1 + 2 + 3 + \cdots + n = \frac{n(n+1)}{2}$$

For example, the sum of the first 10 positive integers is

$$1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 = \frac{10(10+1)}{2} = \frac{10(11)}{2} = 55$$