Consecutive sums

Problem sheet 2

Consecutive sums

Numbers like 7, 8, 9 are called consecutive numbers because they follow directly on, one from another.

We are going to explore which numbers can be made by adding up consecutive numbers.

$7 + 8 + 9 = 24$

So 24 can be made from consecutive numbers.

Is there more than one way to make 24?

25 for example can be made by $12 + 13$ *or* by $3 + 4 + 5 + 6 + 7$.

Which numbers can be expressed in this way?

Which numbers cannot be?

Prove your statements.