

# Homework 9 Solutions

## Problems

1. **Describe the numbers which are divisible by both 9 and 12.**

The multiples of 9 are 9, 18, 27, 36, 45, 54... and the first one of these to be divisible by 12 as well is 36. Hence 36 is the least common multiple of 9 and 12. So numbers which are both divisible by 9 and 12 are just the numbers that are divisible by 36.

2. **Determine the least common multiple of 12 and 16.**

The multiples of 12 are 12, 24, 36, 48, 60 and when we hit 48 we have reached a number that's also divisible by 16. Hence the least common multiple of 12 and 16 is 48.

3. **Describe the numbers which are divisible by 5, 6 and 9 (that is, the numbers which are divisible by all three of these).**

The multiples of 9 are 9, 18, 27, 36, 45, 54, 63, 72, 81, 90... and 90 is the first such to be also divisible by 5 and 6. So the numbers that are divisible by 5, 6 and 9 are just the multiples of 90.