

## The Tortilla Factory

Materials: Handout of problem, graph paper & manipulatives (e.g. colored tiles) to represent the boxes of tortillas

### The Tortilla Factory, Part 1

DAY 1: José ran a tortilla factory. In this factory there was a machine that made the tortillas, placed them in packages, and put the packages in boxes.

One day, there were five completed boxes that were not sold the previous day. José started the machine and kept track of how many boxes there were in the factory after each hour. After one hour there were 8 boxes in the factory, after two hours there were 11 boxes in the factory, and after three hours there were 14 boxes. How many boxes will there be at the end of a 12-hour day?

DAY 2: At the end of day 1, José decided that the machine was working too slow, and needed to get fixed. So he ordered a repairman to fix the machine overnight.

On the next day José started the repaired machine, then came back to check on the work. José forgot to check how many boxes were left over from the day before, and he did not check each hour. After the first hour there were 6 boxes in the factory. After the third hour there were 14 boxes in the factory, and after the fifth hour there were 22 boxes in the factory. How many boxes will there be at the end of the 12-hour day? How many boxes of tortillas were not sold the previous day? Was the machine repaired? How do you know?

### The Tortilla Factory, Part 2

The tortilla factory is working at the repair rate from before. An order has been placed for 30 boxes of tortillas. How long will the machine have to run to fill this order?

### The Tortilla Factory, Part 3

The tortilla factory now has two buildings and one machine in each building. Each machine makes and packages tortillas at the rate shown in the tables below.

Machine 1		Machine 2	
Hours	Boxes	Hours	Boxes
1	8	1	5
2	12	3	11
4	20	5	17

The tortilla factory needs to fill an order for 48 boxes. How long will BOTH machines need to operate to fill the order for 48 boxes?