

The Chocolate FACTOR-y

A nearby chocolate factory produces delicious chocolate squares, and until now they have always sold each chocolate square in an individual wrapper. To be more cost effective, the company is looking into designing boxes that will hold different amounts of chocolates. There are 3 rules:

- Chocolates cannot be stacked on top of each other or they might stick together or melt.
- All boxes must be rectangular.
- The largest box they will consider would hold 36 chocolates.

Your group's job is to design as many different boxes as you can for each of the three amounts of chocolates that you have. Record your results below by listing the dimensions of each possible box.

Amount 1:	Amount 2:	Amount 3:

1. Do some amounts of chocolate have more than one possible box? Why?
2. Which amounts have only one possible box? What are these numbers called?
3. Which amounts have more than one possible box? What are these numbers called?
4. Which amounts can have a square box? What are these numbers called?

5. How many different square boxes could be made that hold 100 or fewer chocolates?

6. What is the next higher number after 36 with only one possible box? How do you know?

Homework: The chocolate company is finally down to three choices: 23 in a box, 24 in a box, or 25 in a box. Write a persuasive letter to the president of the chocolate factory (at least one paragraph) explaining which of the three choices you think would be best and why. Use math terms to justify your argument.