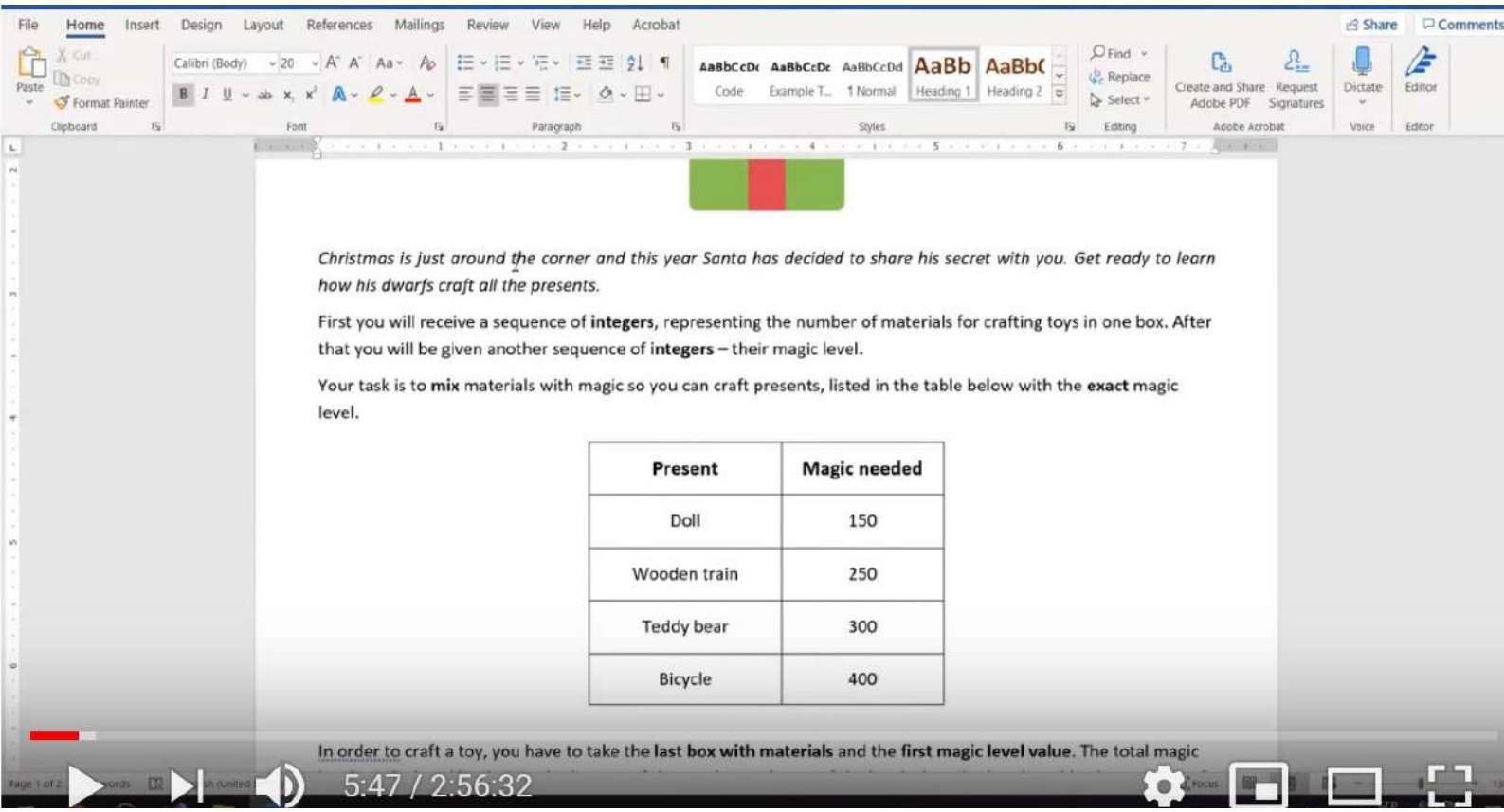

Christmas is just around the corner and this year Santa has decided to share his secret with you. Get ready to learn how his dwarfs craft all the presents.

First you will receive a sequence of **integers**, representing the number of materials for crafting toys in one box. After that you will be given another sequence of **integers** – their magic level.

Your task is to **mix** materials with magic so you can craft presents, listed in the table below with the **exact** magic level.

Present	Magic needed
Doll	150
Wooden train	250
Teddy bear	300
Bicycle	400

In order to craft a toy, you have to take the **last box with materials** and the **first magic level value**. The total magic

Bicycle	400

In order to craft a toy, you have to take the **last box with materials** and the **first magic level value**. The total magic level is calculated by their multiplication. If the result **equals** one of the levels described in the table above, you craft the present and **remove both** materials and magic value. **Otherwise**:

- If the product of the operation is a **negative number**, then you have to sum the values together, remove them both from their positions and the result should be added to the materials.
- If the product **doesn't equal** one of the magic levels in the table and is a **positive** number, remove only the magic value and **increase** the material value with **15**.
- If the magic or material (or both) **equals 0**, remove it (or both) and continue crafting the presents.

Stop crafting presents when you **run out** of boxes of materials **or** magic level values.

Your task is considered done if you manage to craft either one of the pairs - **a doll and a train or a teddy bear and a bicycle**.

Input

- The first line of input will represent the values of boxes with materials - **integers**, separated by **single space**
- On the second line you will be given the magic values - **integers** again, separated by **single space**

Output

- On the first line - print whether you've succeeded in crafting the presents
  - **"The presents are crafted! Merry Christmas!"**
  - **"No presents this Christmas!"**
- On the next two lines print the **materials** and **magic** that are **left, if there are any, otherwise skip the line**
  - "**Materials left: {material1}, {material2}, …**"
  - "**Magic left: {magicValue1}, {magicValue2}, …**
- On the next lines print the presents you **have crafted at least once,** ordered **alphabetically** in the format: **"{toy name}: {amount}"**

…

Constraints

- All of the materials' values will be **integers** in range **[1, 100]**
- Magic level values will be **integers** in range **[-10, 100]**
- In all cases at least one present will be crafted

Examples

Input	Output	Comment
10 -5 20 15 -30 10 40 60 10 4 10 0	The presents are crafted! Merry Christmas! Materials left: 20, -5, 10 Bicycle: 1 Teddy bear: 2	First we have 40*10=400 which is the needed magic for a bicycle. Remove both. 60*(-30) = -1800 (negative). 60+(-30)=30. Remove 60 and -30. Add 30 to materials. 30*10=300 (bear). Remove both. 4*15=60, so remove 4 and the material is increased by 15 (15+15=30). 10*30=300 (bear). Print desired text.
30 5 15 60 0 30 -15 10 5 -15 25	No presents this Christmas! Materials left: 20, 30	