Name:_____

Quick Hit 7

1. You have 15 books to arrange on your shelves. However, the shelf can only hold 6 books. In how many different ways can you arrange books on the shelf?

$$15 \cdot 14 \cdot 13 \cdot 12 \cdot 11 \cdot 10 = 3{,}603{,}600$$

2. You work for a doctor's office and store patient information in a spreadsheet. In order to protect patient privacy, you assign to each patient a unique ID number consisting of three digits followed by two letters. How many patients can you have before you run out of ID numbers? What if you don't want to repeat any of the digits (but you can repeat letters)?

repeats : $10 \cdot 10 \cdot 10 \cdot 26 \cdot 26 = 676{,}000$

No repeated digits : $10 \quad 9 \quad 8 \quad 26 \quad 26 = 486{,}720$