

1. How many two-letter “words” start with either A or B? (In this case a “word” is just a sequence of letters; it doesn’t have to be English, or even pronounceable. For instance “XJ” is a word.)

Sum

Product

Why?

2. Your wardrobe consists of 2 shirts, 4 pants, and 18 bow ties. How many different outfits?

Sum

Product

Why?

3. Suppose you roll a 12-sided die seven times, recording the number that appears after each roll. How many sequences of seven rolls are possible?

Sum

Product

Why?

4. How many lattice paths from $(0,0)$ to $(10,10)$ pass through the point $(4,7)$?

Sum

Product

Why?

5. How many different pizzas can you make if you can choose from 10 toppings and you can have any number of toppings on your pizza?

Sum

Product

Why?

6. How many two-letter words start with one of the 5 vowels?

Sum

Product

Why?

7. How many license plates can you make out of three letters followed by three numerical digits?

Sum

Product

Why?

8. How many 10-bit strings of weight 6 start with either 11 or 00?

Sum

Product

Why?