

**Problem 1.** How many cards are there in a deck of *Set*?

- A)  $3^4$     B)  $3 \times 4$     C)  $4^3$     D)  $4 + 3$     E) None of these

**Problem 2.** How many different *Sets* are possible?

- A)  $27 \times 40$     B)  $81 \times 80$     C)  $81 \times 80 \times 79$     D)  $27 \times 40 \times 79$     E) None of these

**Problem 3.** How many cards are there is a deck of  $n$ -dimensional *Set*?

**Problem 4.** How many  $n$ -dimensional *Sets* are possible?

**Problem 5.** What if each characteristic had  $k$  possibilities? How many cards would there be in the deck of  $n$ -dimensional *Set*?

**Problem 6.** How many *Sets* (of 4 cards) are possible in 4-characteristic, 4-dimensional *Set*?

**Problem 7.** Suppose that  $S$  is a set,  $T$  is a subset of  $S$ , and  $R$  is an equivalence relation on  $S$ . Is  $R \cap T \times T$  an equivalence relation on  $T$ ?

- A) Yes    B) Sometimes    C) No

**Problem 8.** Suppose that  $S$  is a set,  $T$  is a subset of  $S$ , and  $R$  is *not* an equivalence relation on  $S$ . Is  $R \cap T \times T$  an equivalence relation on  $T$ ?

- A) Yes    B) Sometimes    C) No

**Problem 9.** Let  $S$  be a set. Which is larger?

- A) The number of equivalence relations on  $S$   
B) The number of partitions of  $S$   
C) They are the same size  
D) The question is not well-defined