TOPIC: FUNDAMENTAL COUNTING PRINCIPLE

Fundamental Counting Principle

◆ You'll be asked to find the number of total possible outcomes when faced with multiple options for multiple things.

3 shirts ___ 4 pants = ____ outfits

Fundamental Counting Principle

If there are: m possible choices for one thing / outcomes of one event,

… and n possible choices for another thing / outcomes of another event,

there are _____ TOTAL possible choices for BOTH things / outcomes of BOTH events.

EXAMPLE

(*A*) A menu lists 4 appetizers & 6 entrees. How many different meals with both an appetizer & an entree do you have to choose from?

_____ × _____

# of options for 1st thing — # of options for 2nd thing

(*B*) How many possible outcomes are there if you flip a coin & roll a six-sided die?

_____ × _____

(*C*) How many different outfits can you make with 4 shirts, 5 pairs of pants, & 3 pairs of shoes?

_____ × _____ × _____

◆ When faced with MORE than two things, just continue to _____ by the number of options of each thing.

TOPIC: FUNDAMENTAL COUNTING PRINCIPLE

PRACTICE How many possible outcomes are there if you roll 5 dice?

PRACTICE How many options are there for license plates with any 3 letters (A-Z) followed by any 3 numbers (0-9)?

PRACTICE Phone numbers are 10 digits long. How many possible phone numbers are there if the 1st & 4th numbers can't be 0?

___ ___ ___ - ___ ___ ___ - ___ ___ ___ ___